

Figure 2

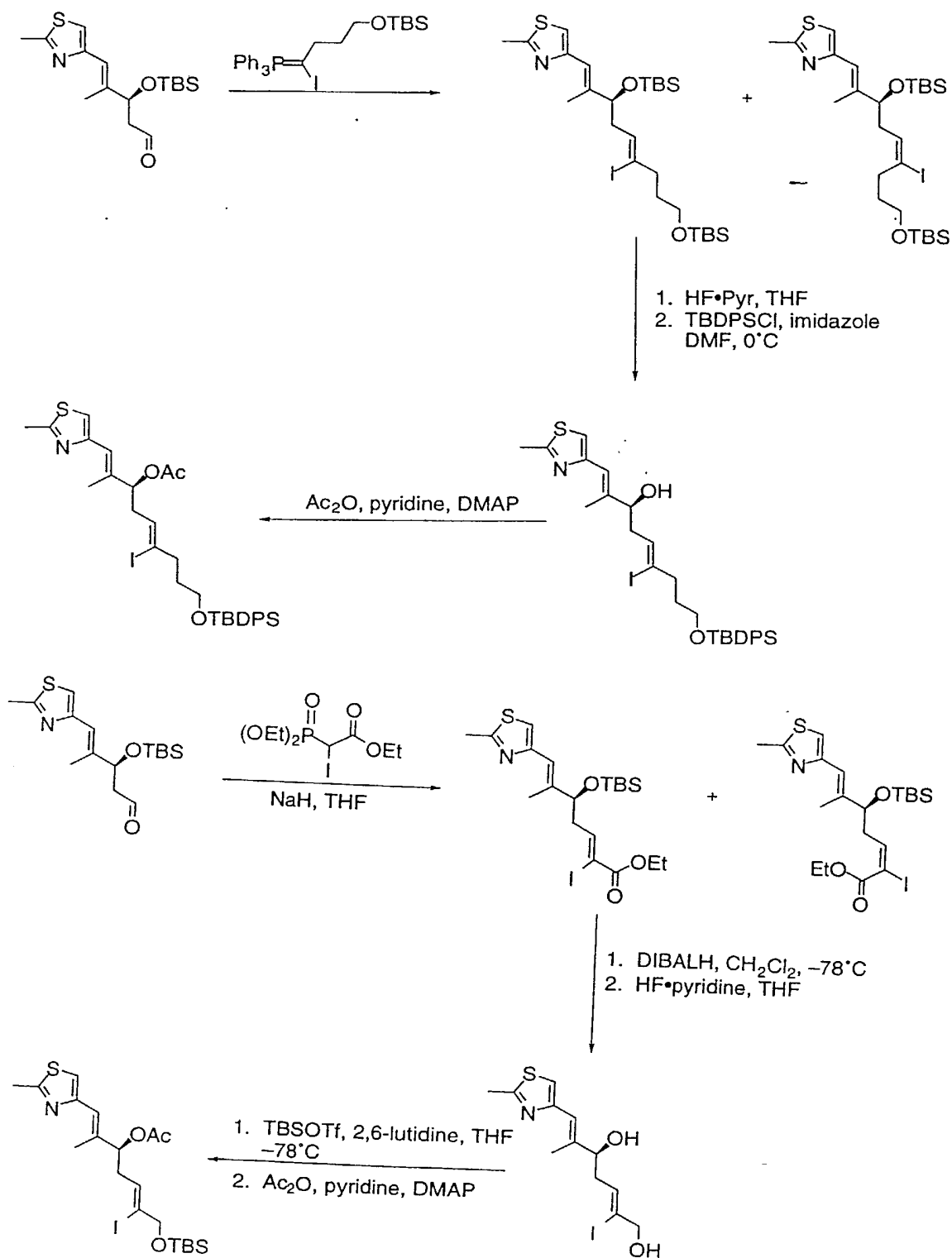


Figure 3(A)

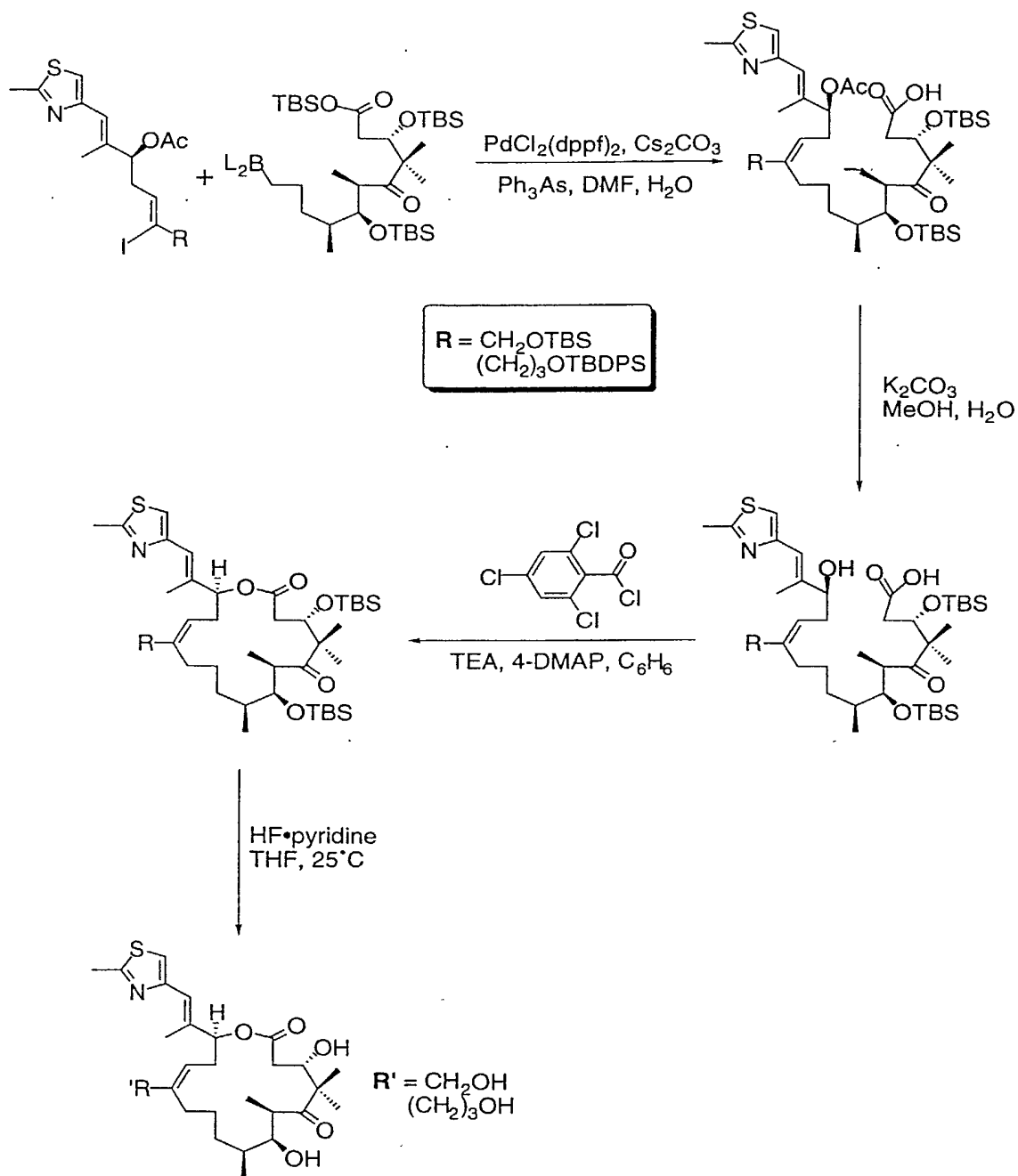


Fig. 3(B)

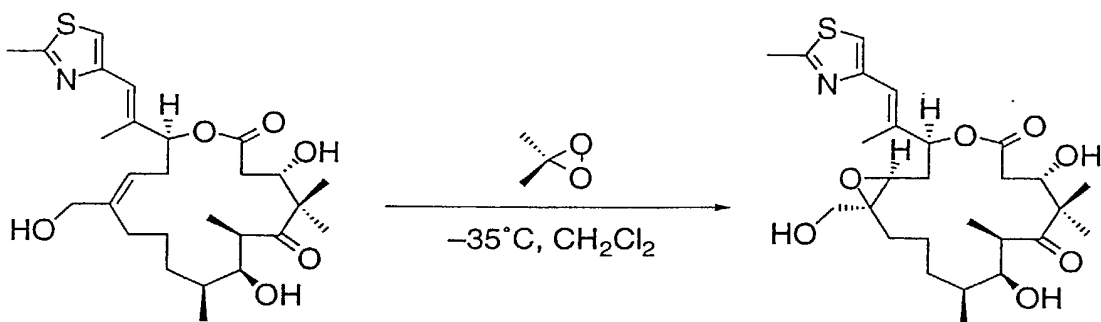
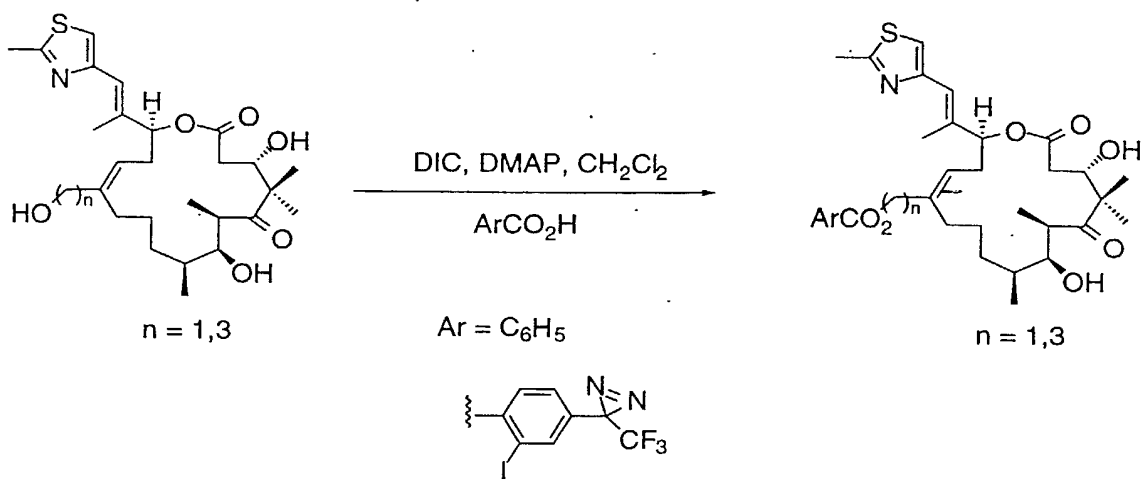


Fig. 3(C)

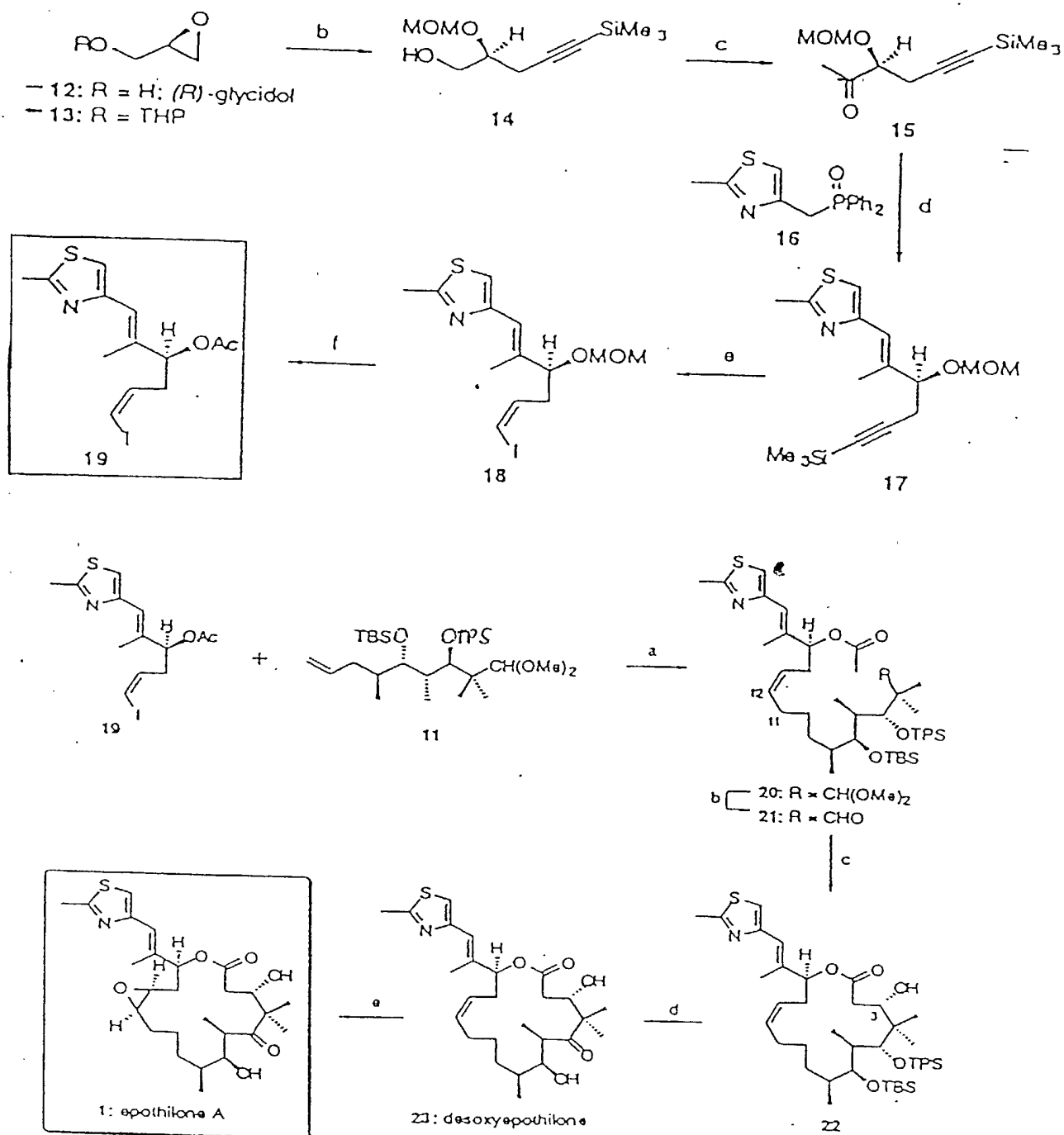


Figure 4

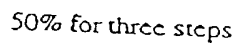
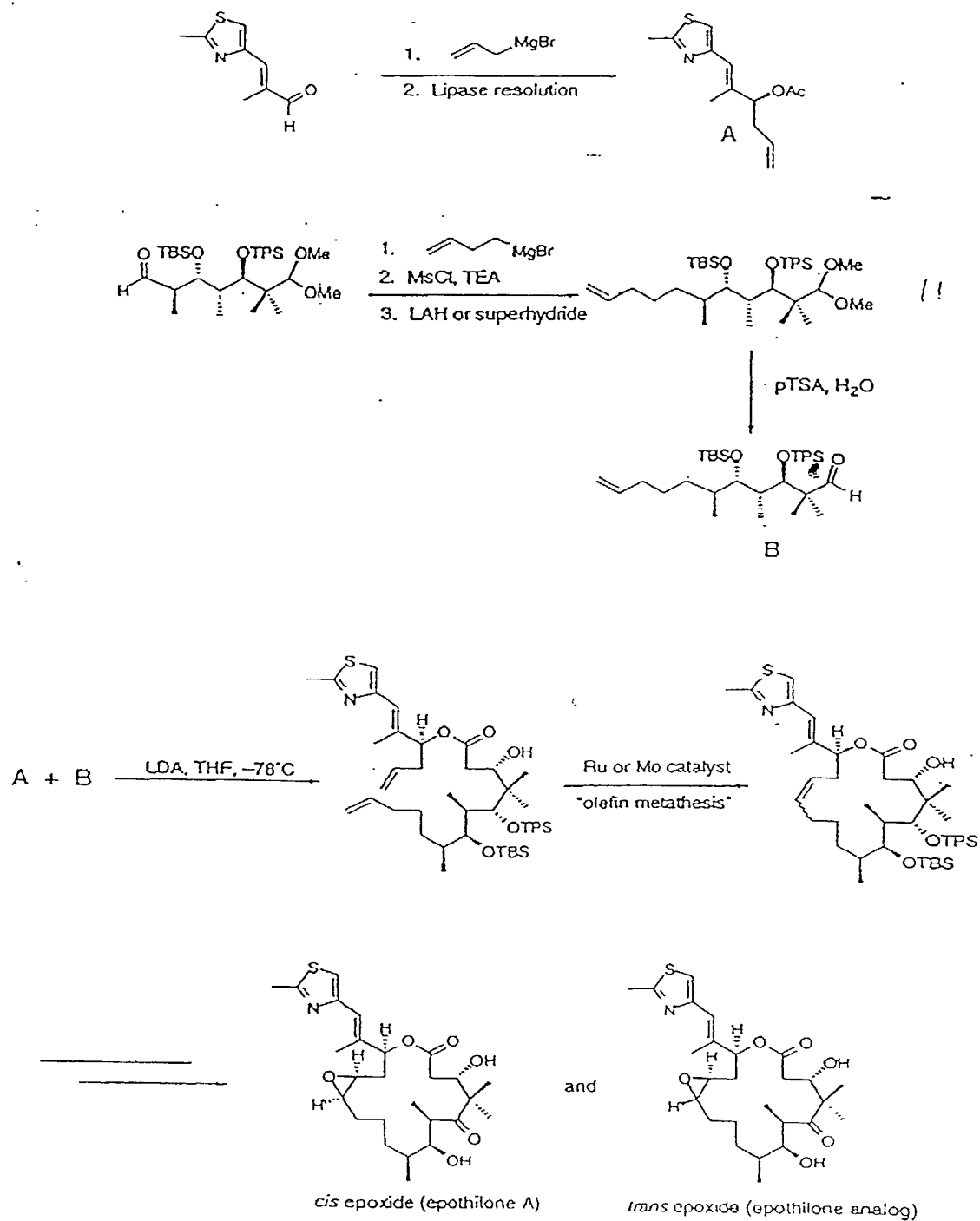


Figure 5



\* 17 steps from known starting materials vs. 27 steps for aldol macrocyclization

Figure 6





4B

5B E = H or  
 E = X — H

Figure 7

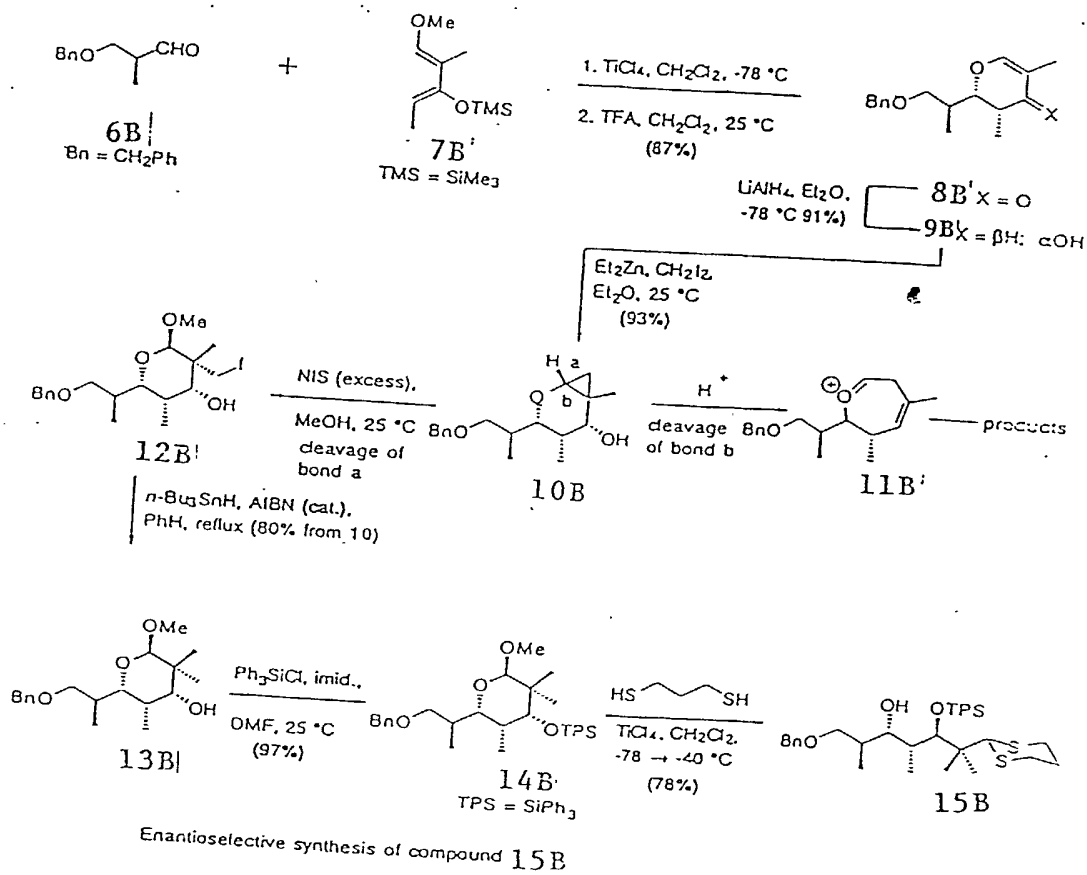
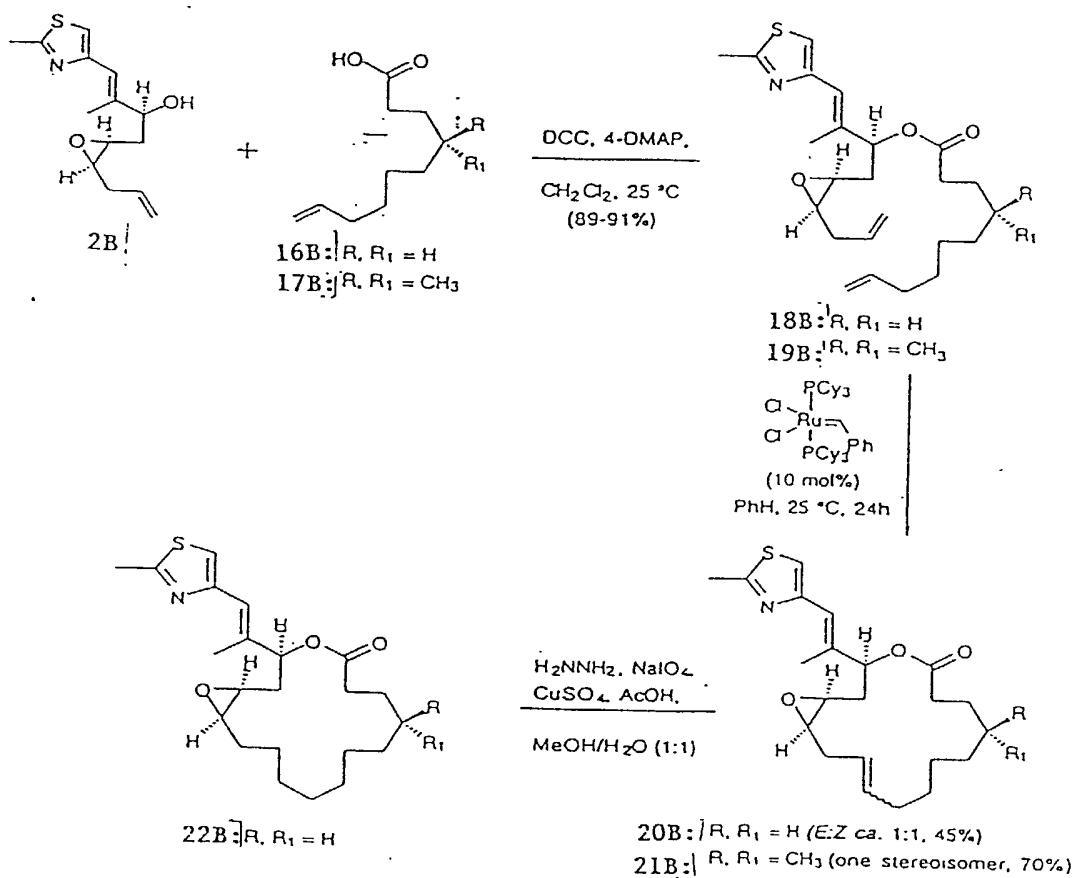


Figure 8



Construction of epothilone model systems 20<sup>B</sup>, 21<sup>B</sup>, and 22<sup>B</sup> by ring-closing olefin metathesis

Figure 9

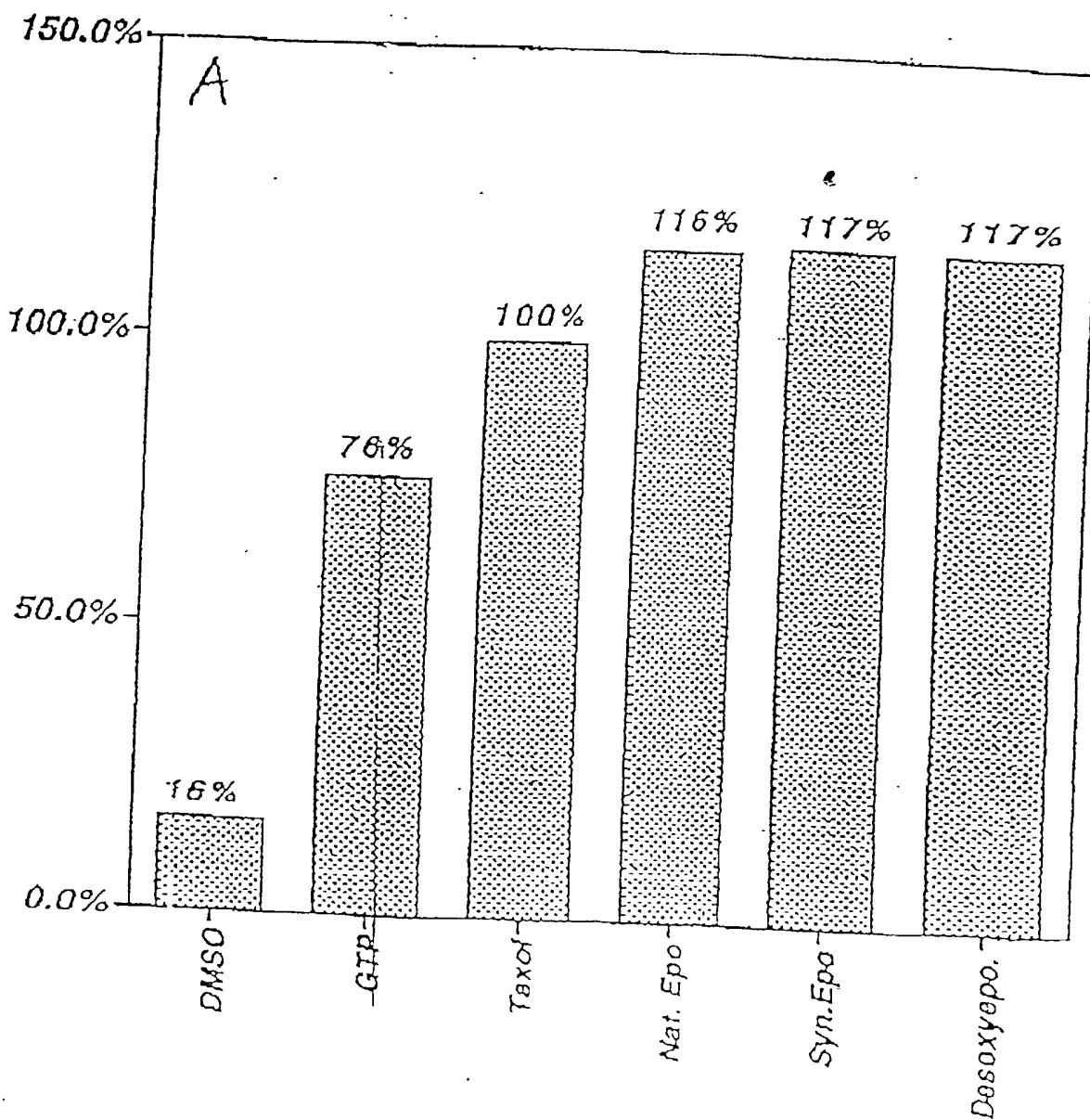


Figure 10

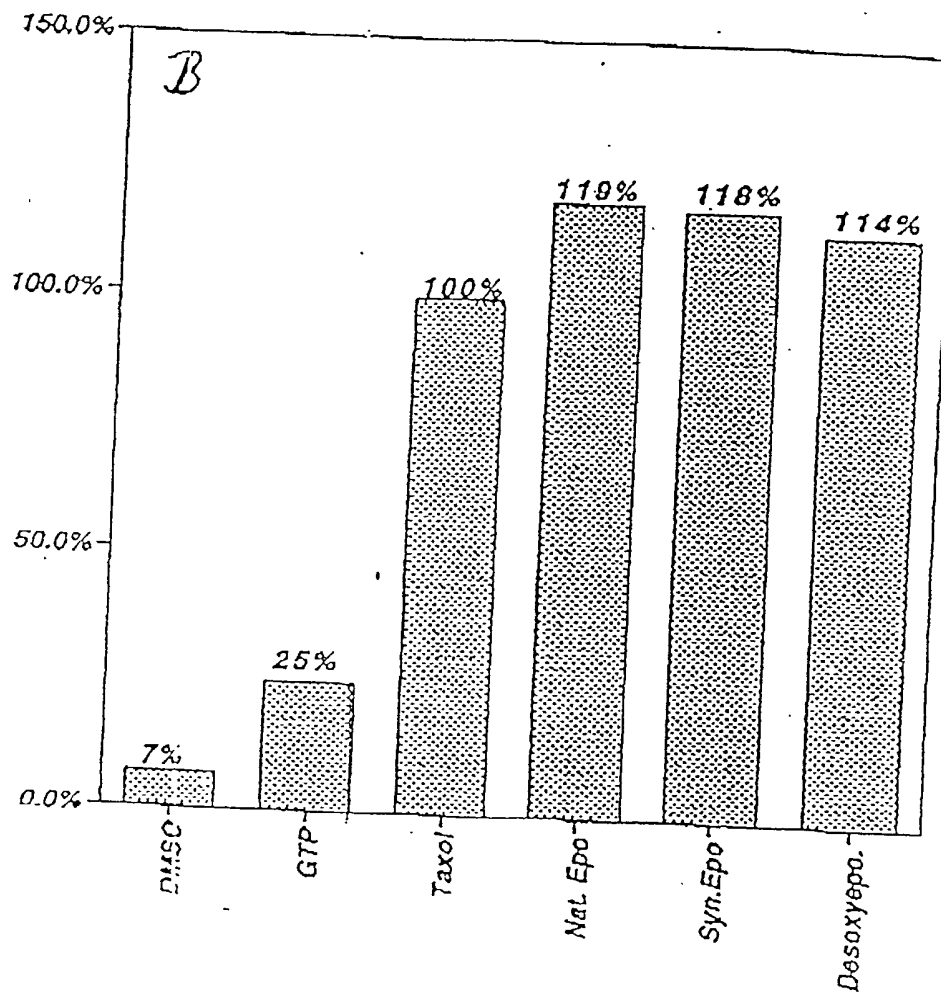


Figure 11

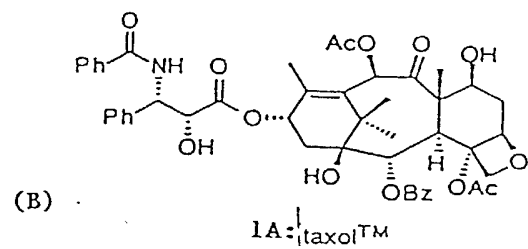
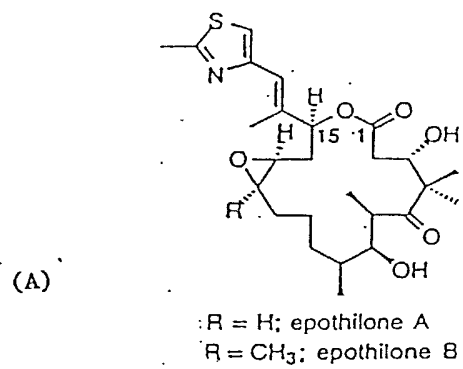


Figure 12

COC=C(R2)C(=C(R1)OSi(R)(R)R) + H-C(=O)-R --[diene-aldehyde cyclocondensation]--> COC1=C(R2)C(=O)C(R1)C(R)O1  
 5A + 6A → 7A

7A is a 2,4-dihydropyran derivative with substituents R<sub>1</sub>, R<sub>2</sub>, and R, and a trimethylsilyloxy group.

7A is converted to 8A via a series of steps (indicated by a box with the number 4):

7A → [4 steps] → Intermediate → [oxidative cleavage] → 8A

The intermediate structure is shown as a 2,4-dihydropyran derivative with substituents R<sub>1</sub>, R<sub>2</sub>, and R, and a trimethylsilyloxy group.

8A is a 2,4-dihydropyran derivative with substituents R<sub>1</sub>, R<sub>2</sub>, and R, and a trimethylsilyloxy group.

9A: R<sub>1</sub>, R<sub>2</sub> = H or alkyl

Figure 13

Figure 14



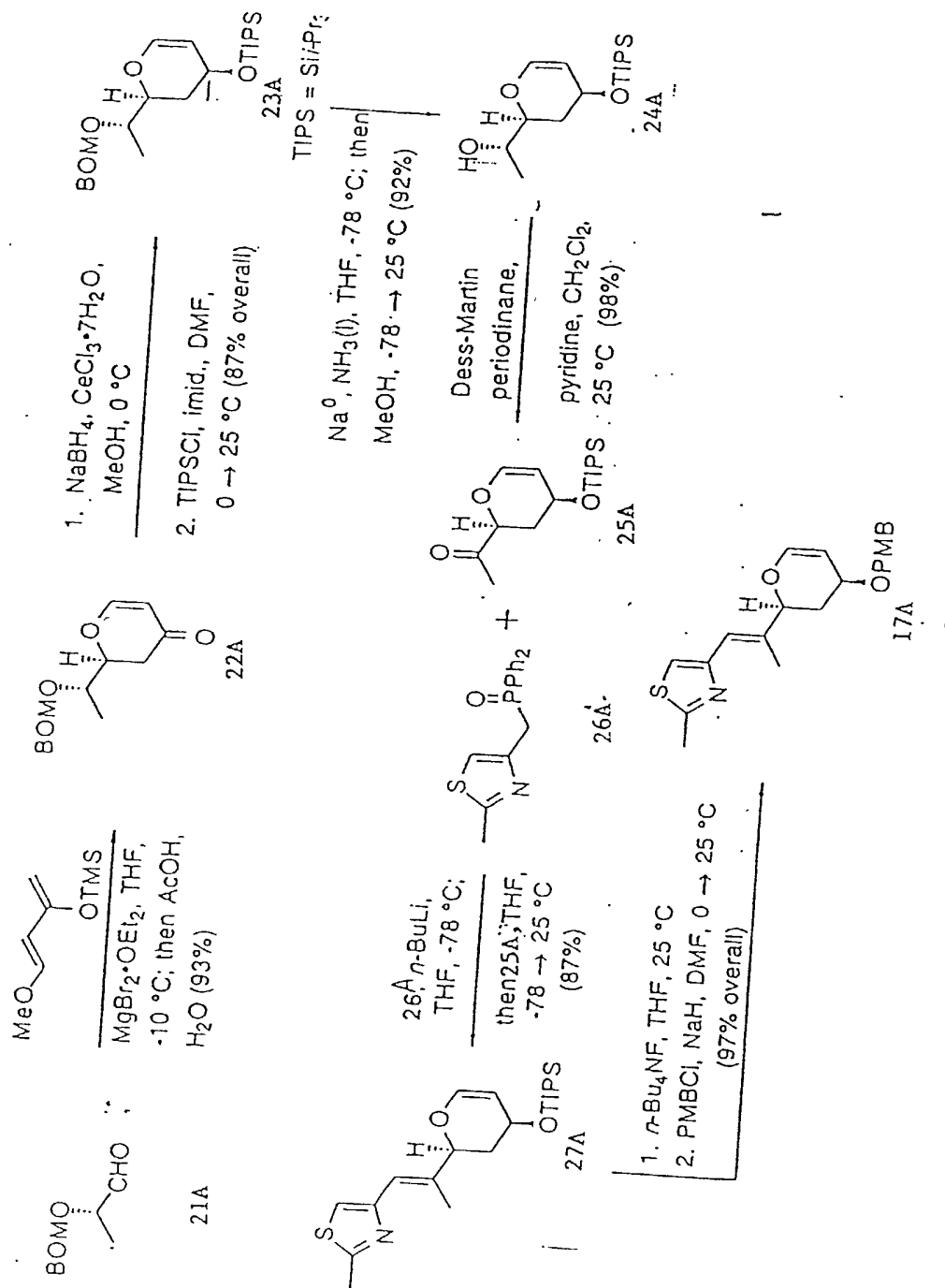


Figure 15

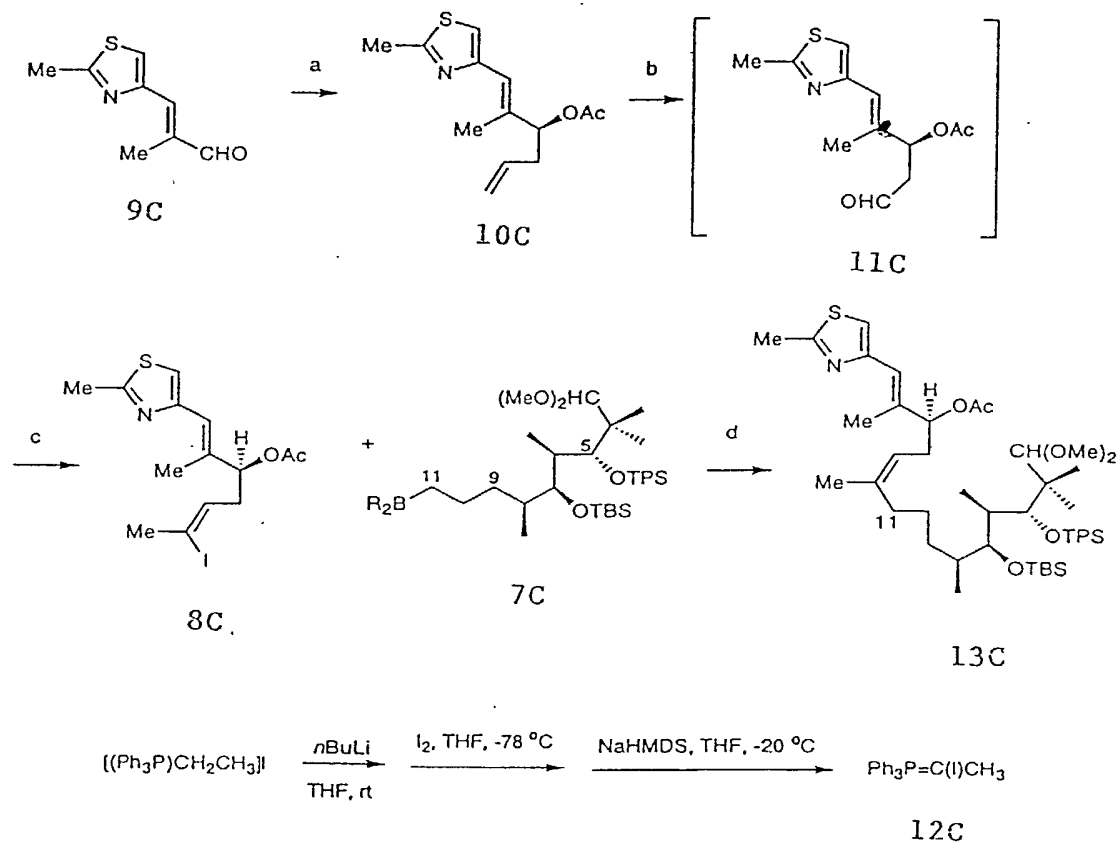


Figure 16

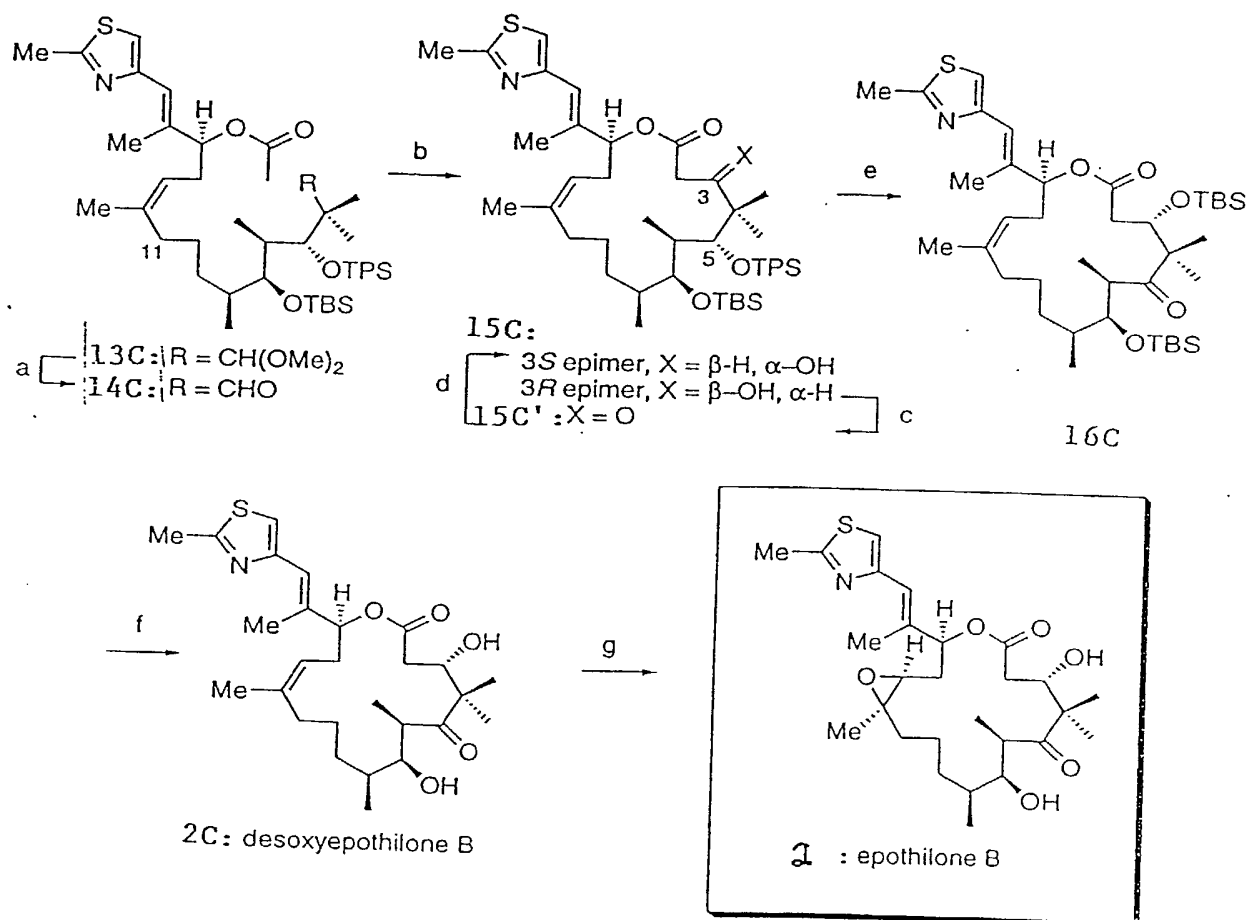


Figure 17

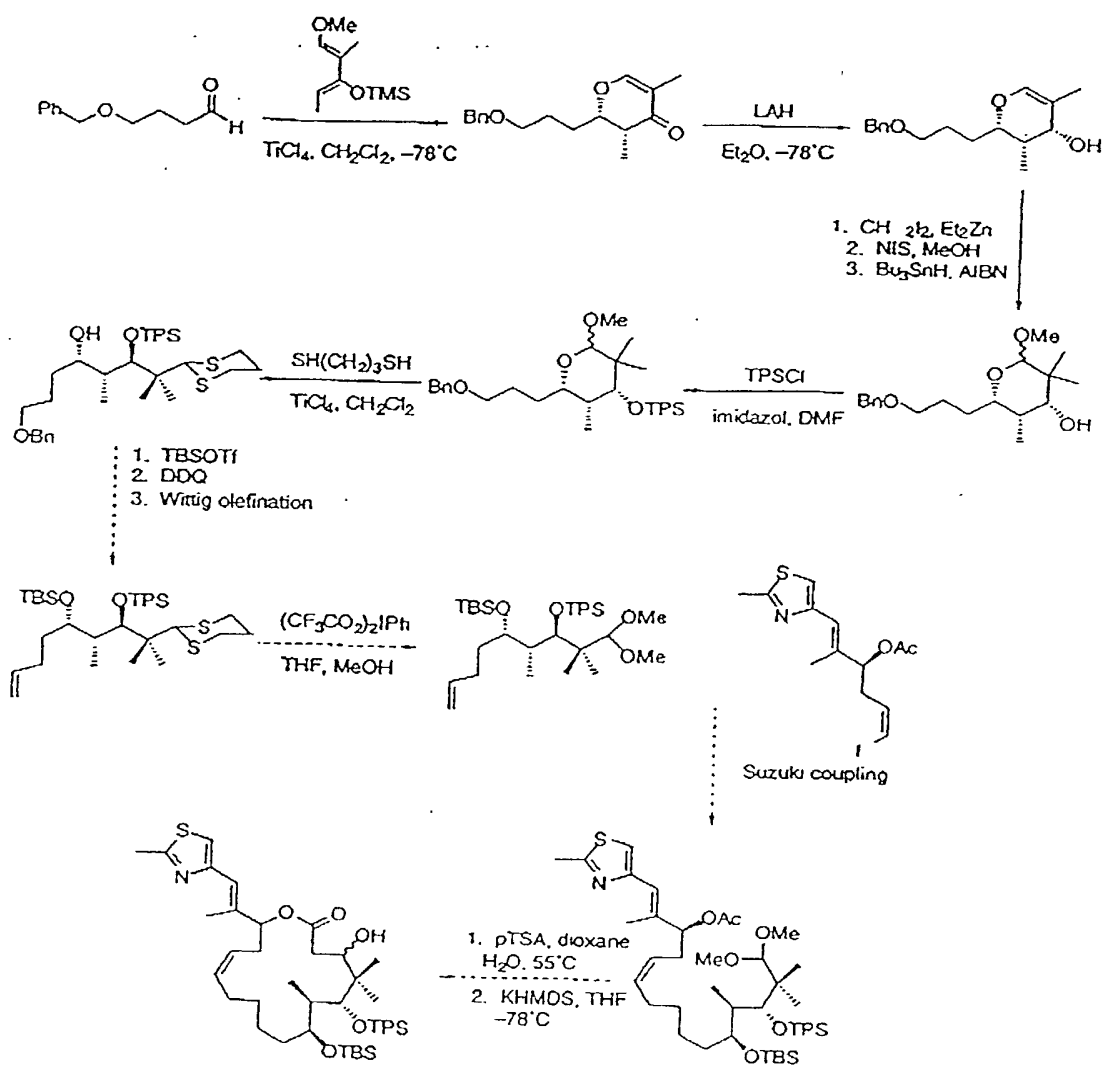
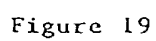


Figure 18



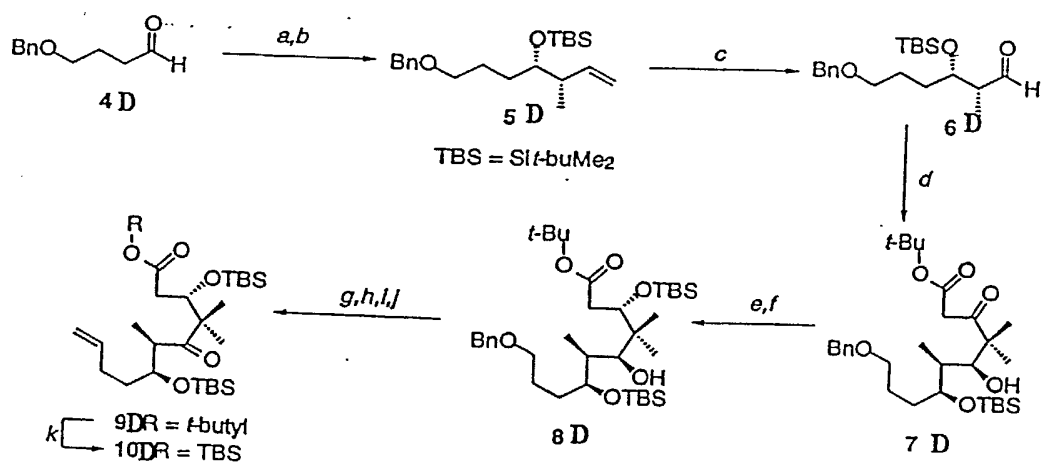
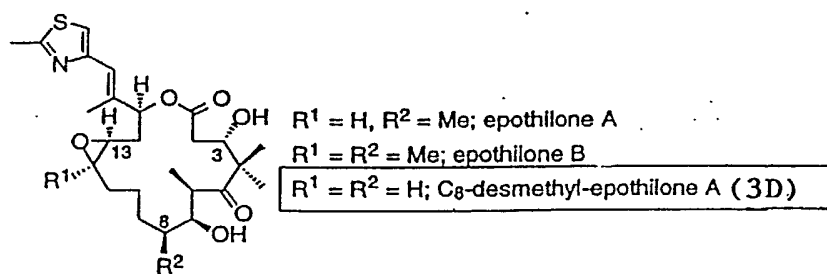


FIGURE 20

FIGURE 21

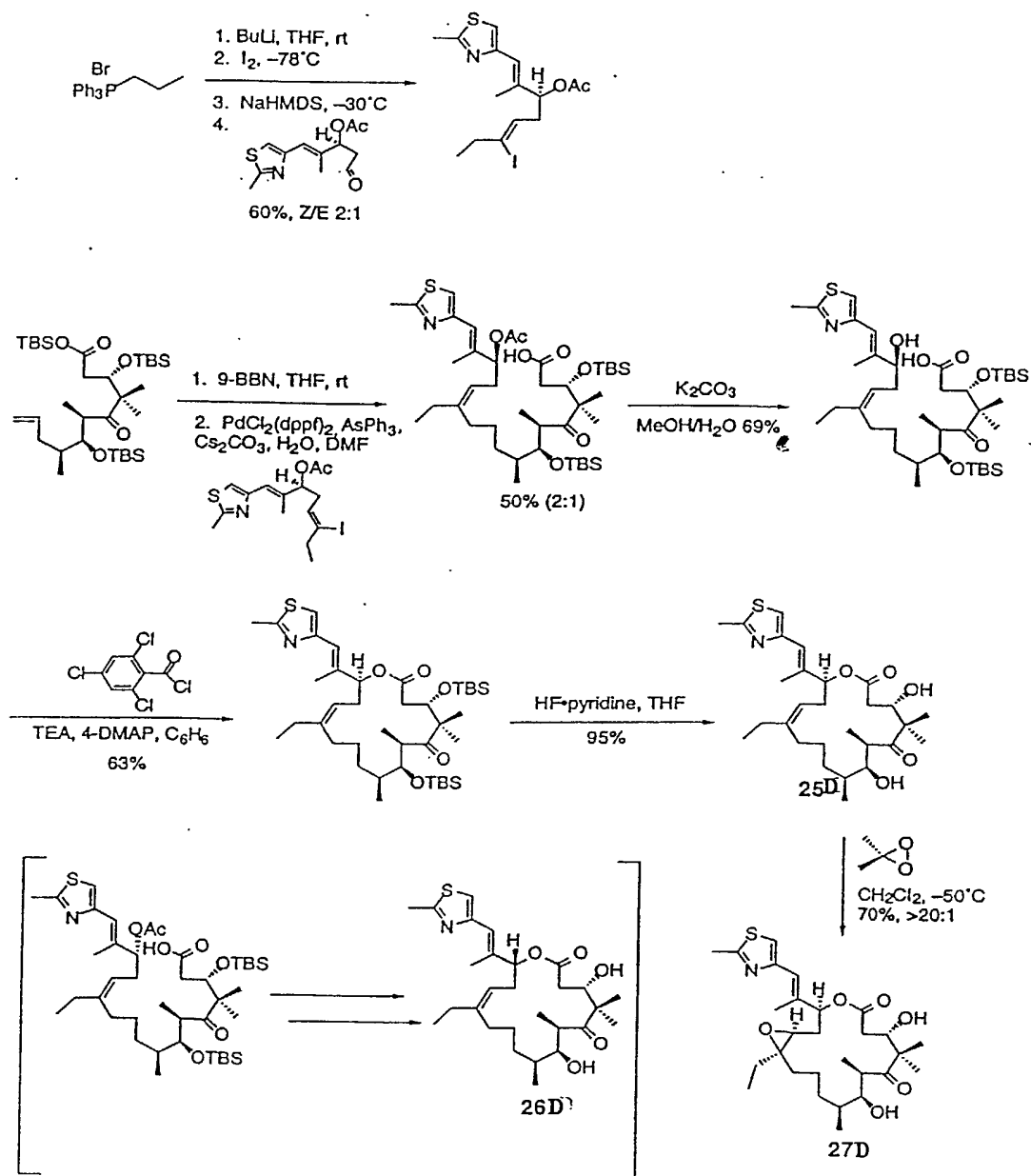


FIGURE 22





FIGURE 23

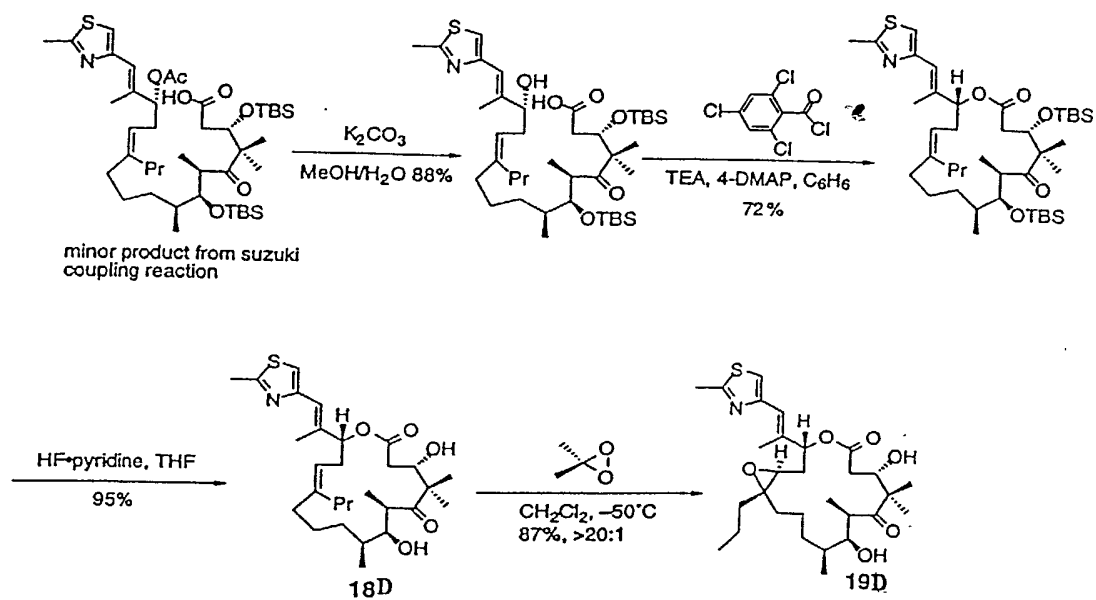


FIGURE 24

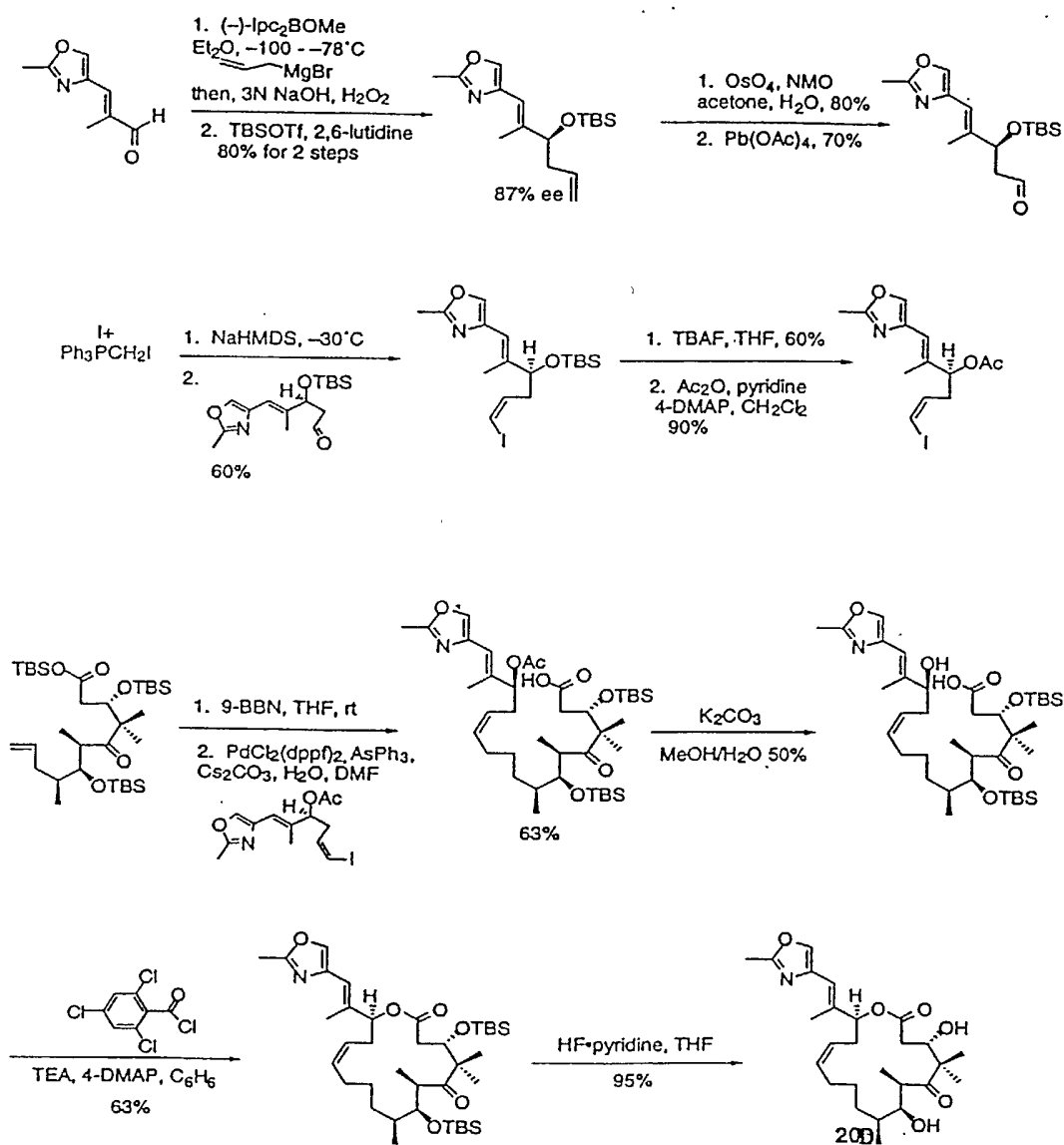


FIGURE 25

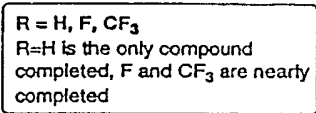


FIGURE 26

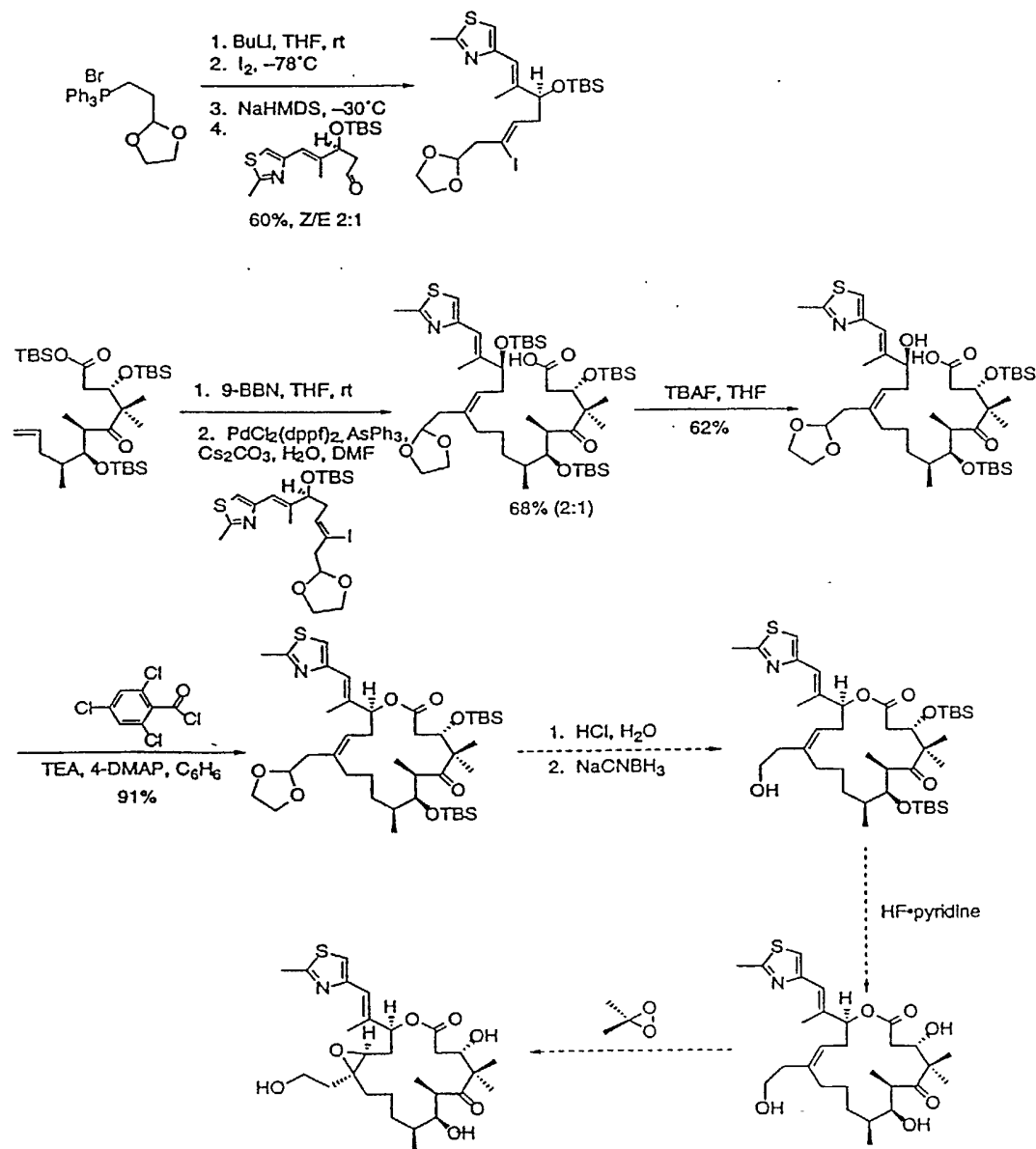


FIGURE 27



FIGURE 29

Chemical structure of compound 18, a complex polycyclic molecule featuring a hydroxyl group, a ketone, and a pyridine ring.

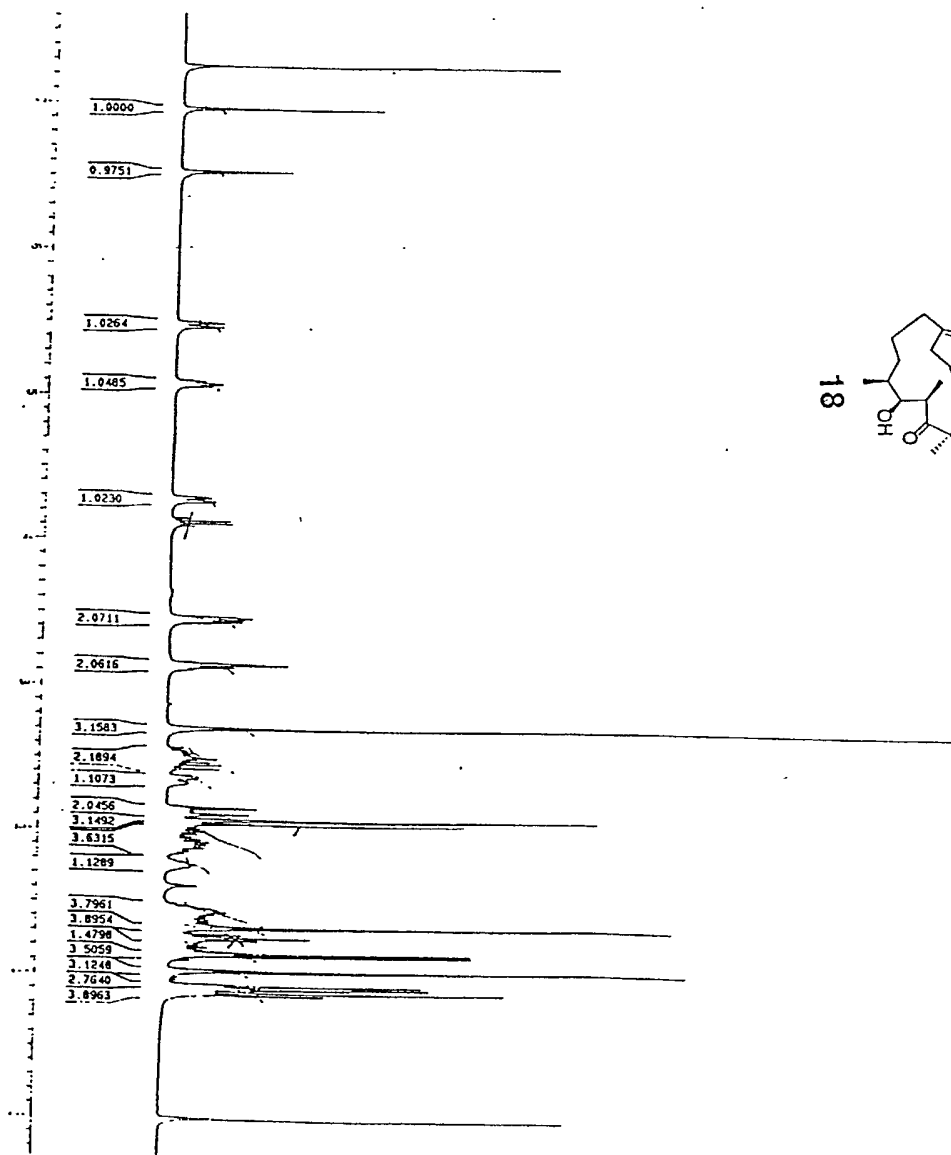


FIGURE 30



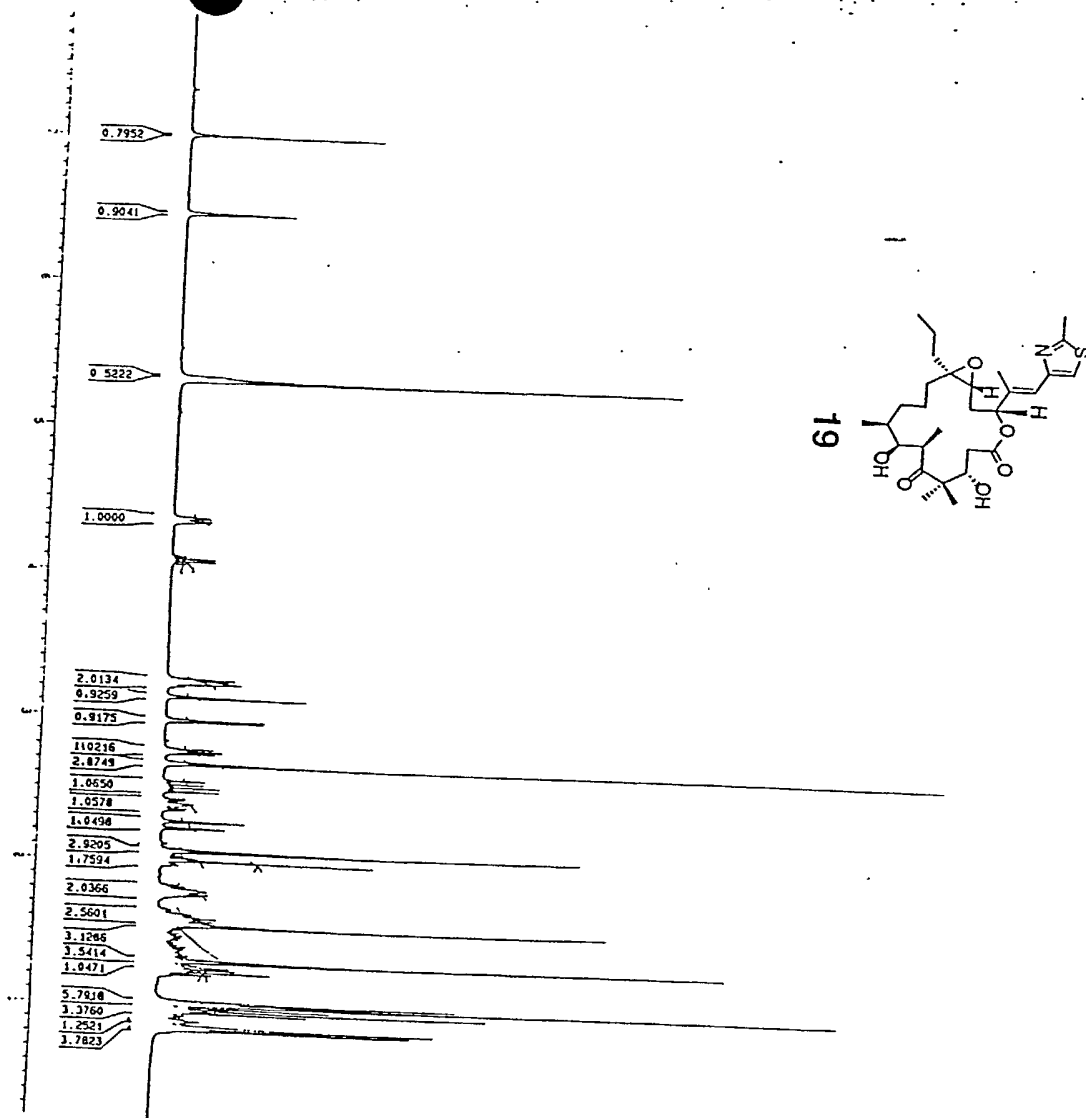
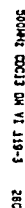


FIGURE 31

FIGURE 32



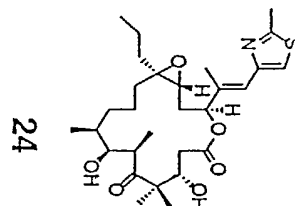
[illegible]

FIGURE 34

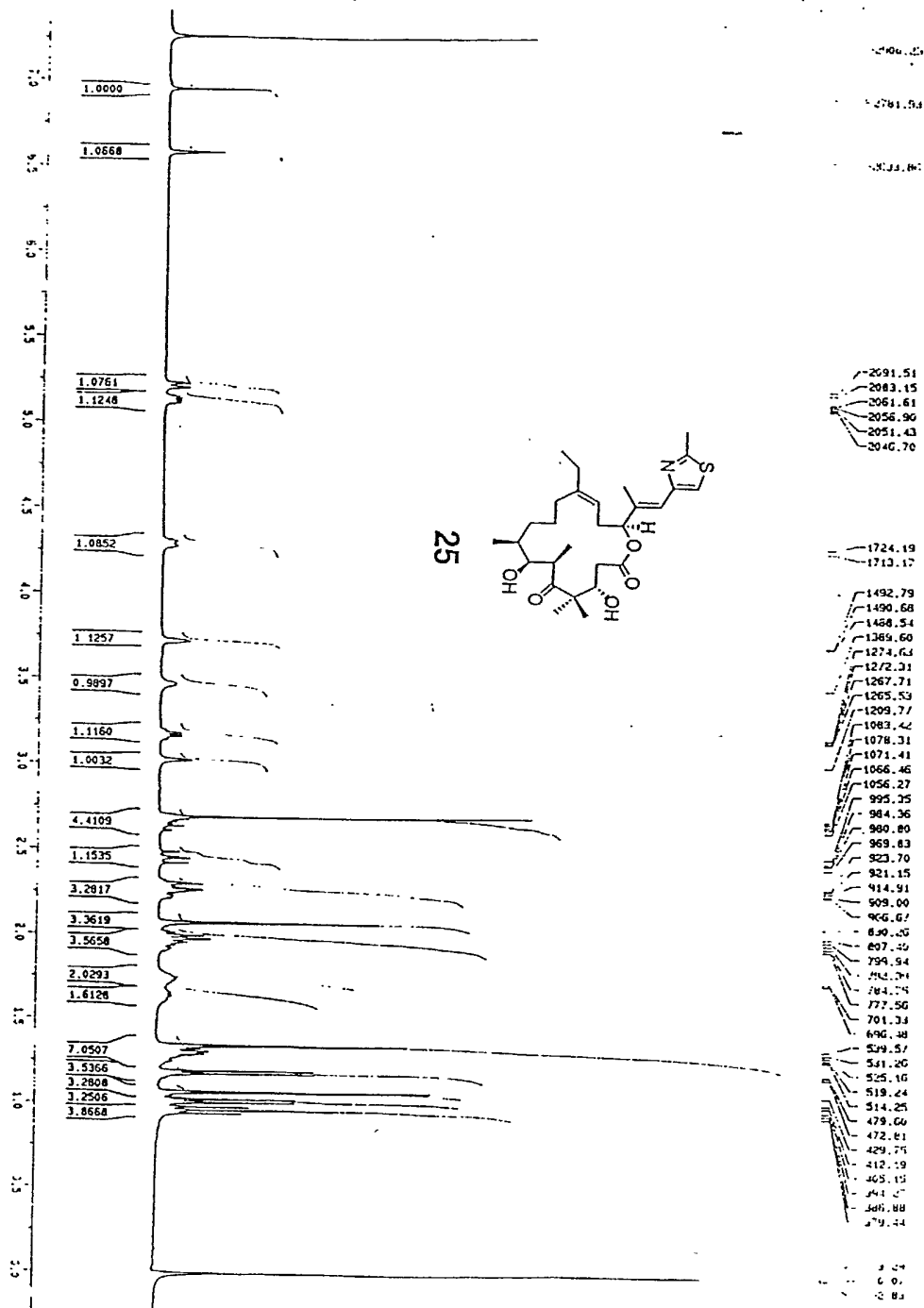


FIGURE 35

DSS-11-135-11

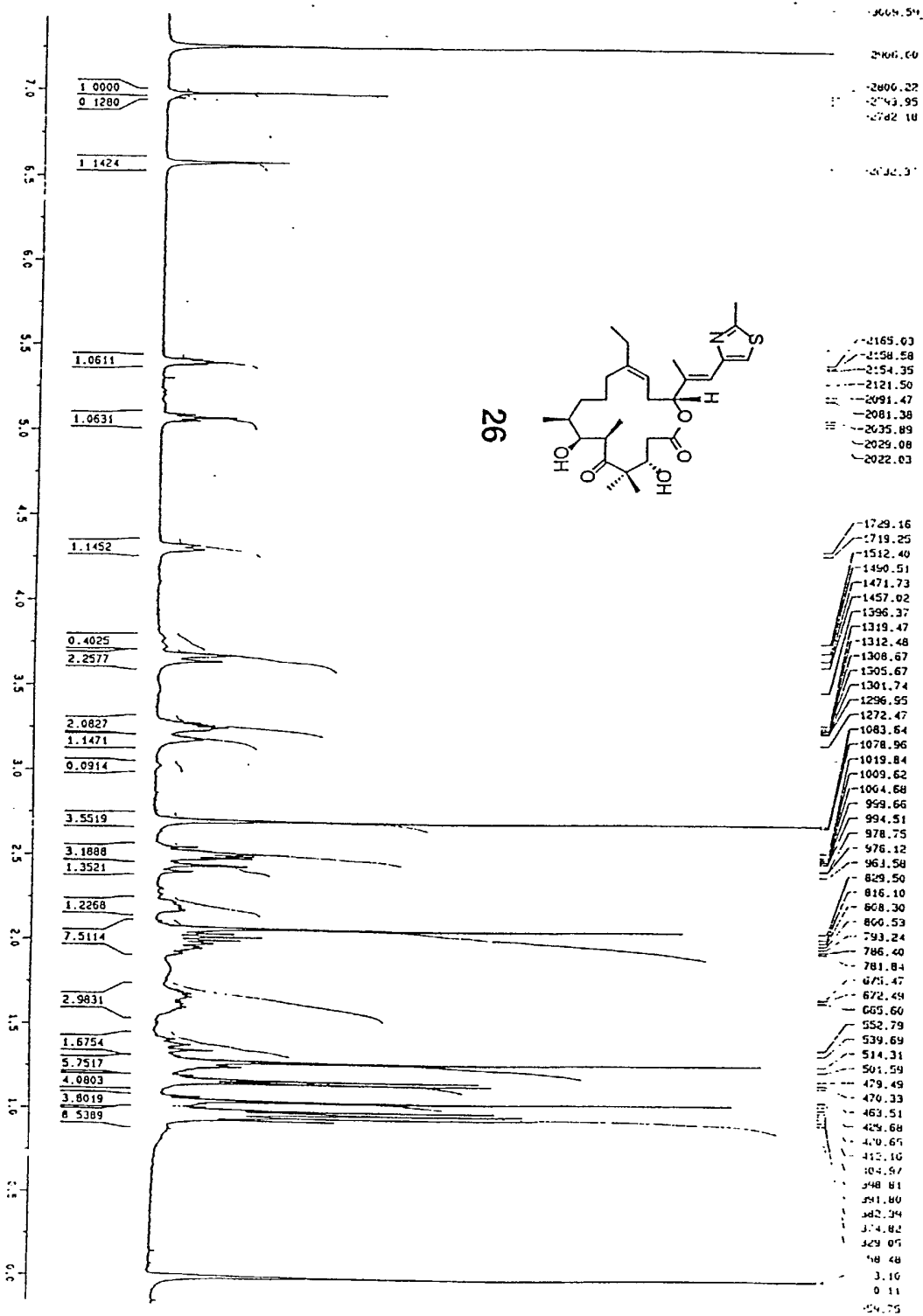


FIGURE 36



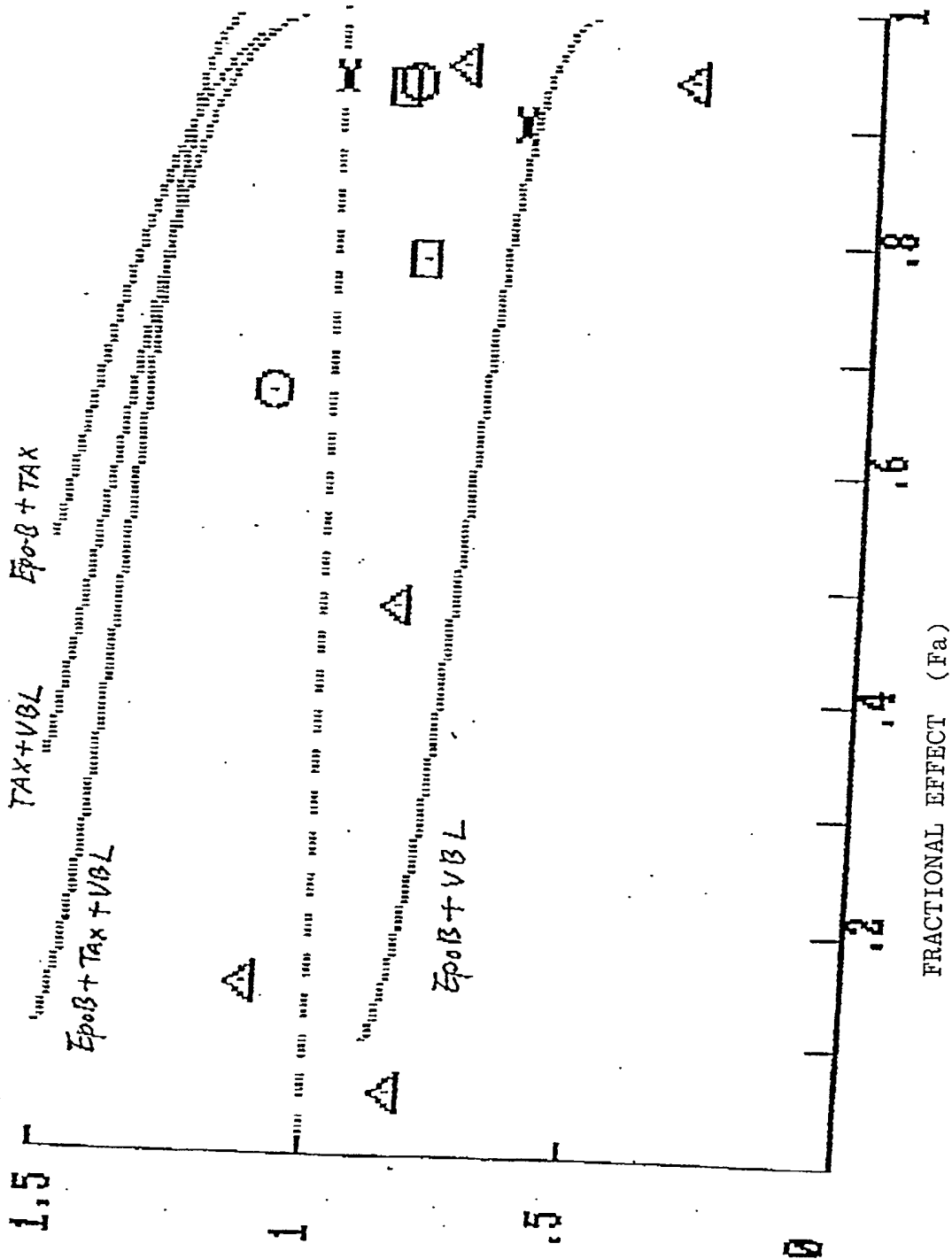


Figure 38

FORM 150, 101-200-000



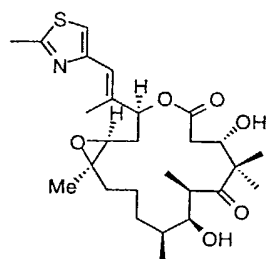
The chemical structure shows a 14-membered macrolide ring with several stereocenters indicated by wedges and dashes. It features a thiazole ring attached to the macrolide, a carboxylic acid group, and multiple hydroxyl groups. The structure is highly complex and represents a natural product derivative.

Chemical structure of compound 10, a 14-membered macrolide. It features a thiazole ring substituted with a methyl group and a vinyl group, which is connected to the macrolide chain. The macrolide ring has three hydroxyl groups and a methyl group, and is linked to a side chain containing a double bond and a methyl group.

The chemical structure shows a thiazole ring substituted with a methyl group at the 4-position. This ring is connected via a double bond to a cyclopropane ring. The cyclopropane ring is further substituted with a hydrogen atom and a hydrogen atom. A long chain, containing a double bond and a methyl group, is attached to the cyclopropane ring. The chain ends with a methyl group.

The chemical structure shows a complex molecule with a thiazole ring substituted with a methyl group. This ring is connected via a vinyl bridge to a cyclohexene ring. The cyclohexene ring is further substituted with a carboxylic acid group and a hydroxyl group, and is linked to a side chain containing another hydroxyl group and a methyl group.

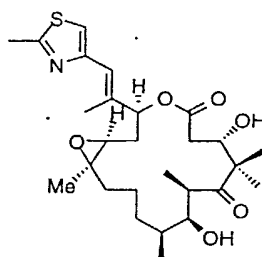
7  
(7.36)  
[9.82]



synthetic epothilone B

**8**

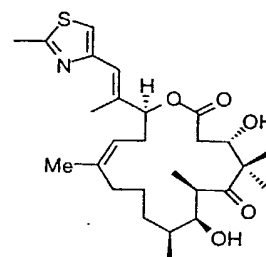
(0.00044)  
[0.0026]



natural epothilone B

**9**

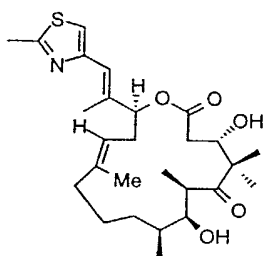
(0.00017)  
[0.0012]



desoxyepothilone B

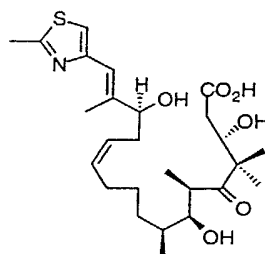
**10**

(0.0095)  
[0.017]



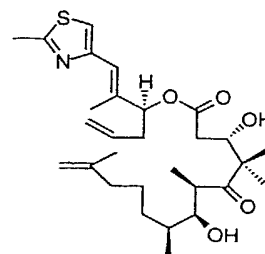
**11**

(0.090)  
[0.262]



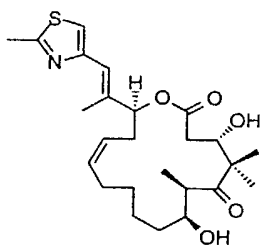
**12**

(0.79)  
[>5]



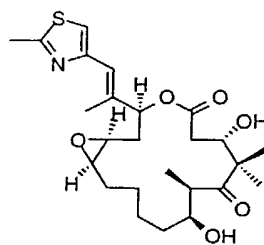
**13**

(11.53)  
[5.63]



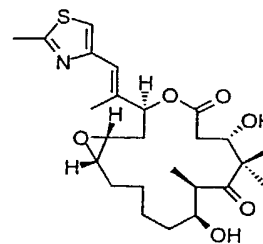
**14**

(5.42)  
[5.75]



**15**

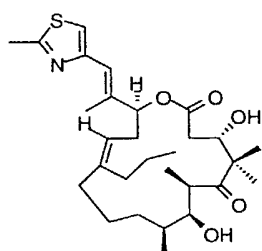
(0.96)  
[5.95]



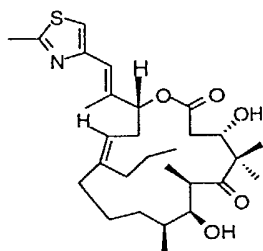
**16**

(7.47)  
[16.48]

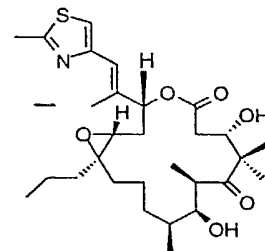
Fig. 40



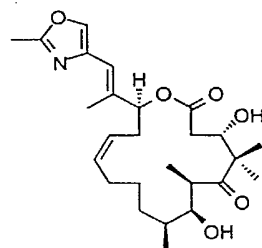
**17**  
(0.090)  
[0.254]



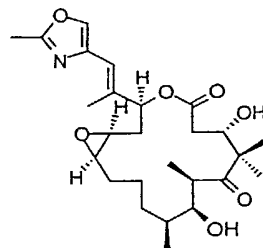
**18**  
(1158)  
[>720]



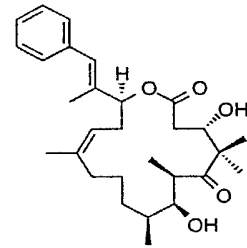
19  
(0.96)  
[>1.0]



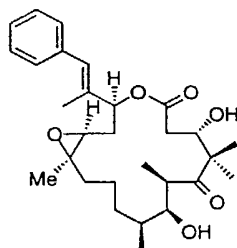
**20**  
(0.030)  
[0.049]



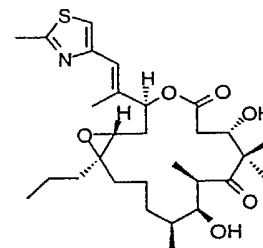
21



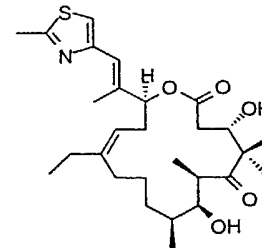
**22**  
(0.098)  
[0.146]



23



**24**  
(0.0043)  
[0.032]



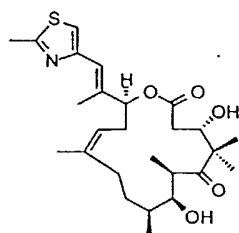
**25**  
(0.021)  
[0.077]

Fig. 41

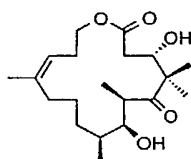
The chemical structure shows a complex molecule with a thiazole ring substituted with a methyl group. This ring is connected via a vinyl bridge to a chiral center. This center is part of a long chain that includes another vinyl group and a carboxylic acid moiety. The carboxylic acid is further substituted with a hydroxyl group and a methyl group. The chain also features several other stereocenters with methyl and hydroxyl substituents, and a long alkyl tail.

The chemical structure of compound 1 is a large macrocycle. It features a thiazole ring substituted with a methyl group and a vinyl group. The vinyl group is part of a side chain that includes a hydroxyl group and a methyl group. The macrocycle itself is a 14-membered ring with several stereocenters indicated by wedges and dashes. The structure is shown in a perspective view, highlighting its complex three-dimensional shape.

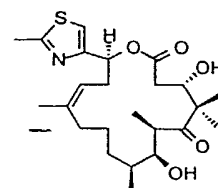
Fig. 42(A)



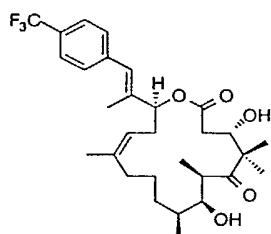
**35**  
(>10)  
[8.95]



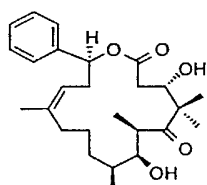
**36**  
(234.5)  
[>10]



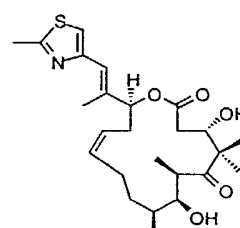
**37**  
(3.25)  
[1.20]



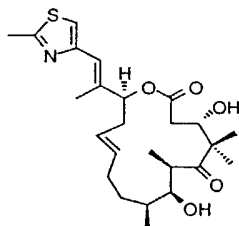
**38**  
(0.254)  
[>5.0]



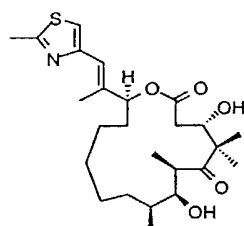
**39**  
(1.80)  
[>5.0]



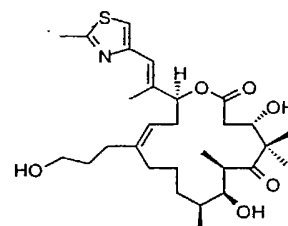
**40**  
(36.9)  
[47.3]



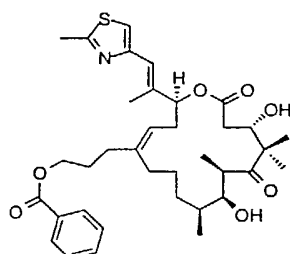
**41**  
(60.1)  
[59.2]



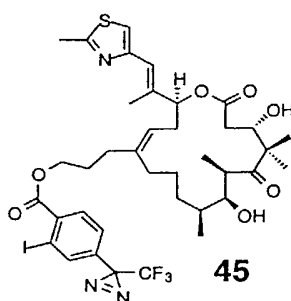
**42**  
(7.41)  
[12.9]



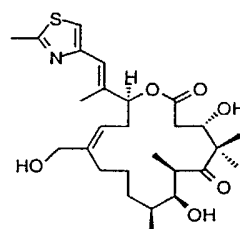
**43**  
(0.0095)  
[0.167]



**44** (0.250)  
[0.905]



**45**



**46** (0.049)  
[>1.0]

Fig. 42(B)

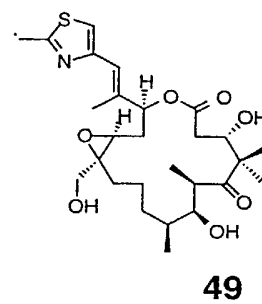
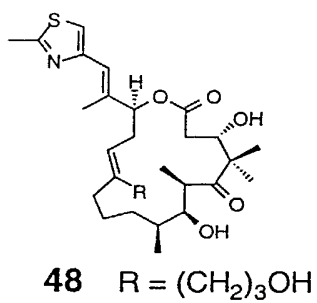


Fig. 42(C)

Fig. 43(A)

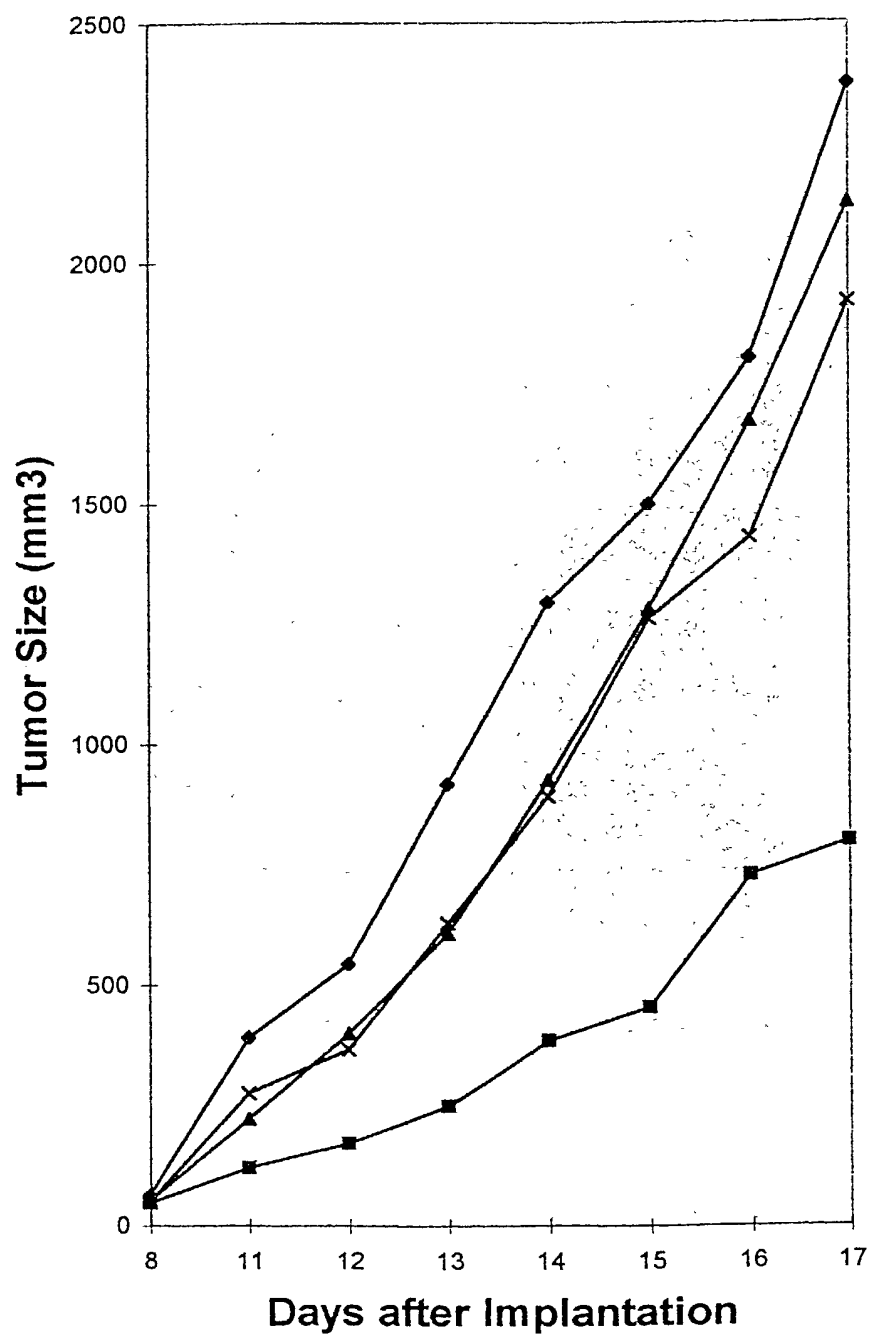
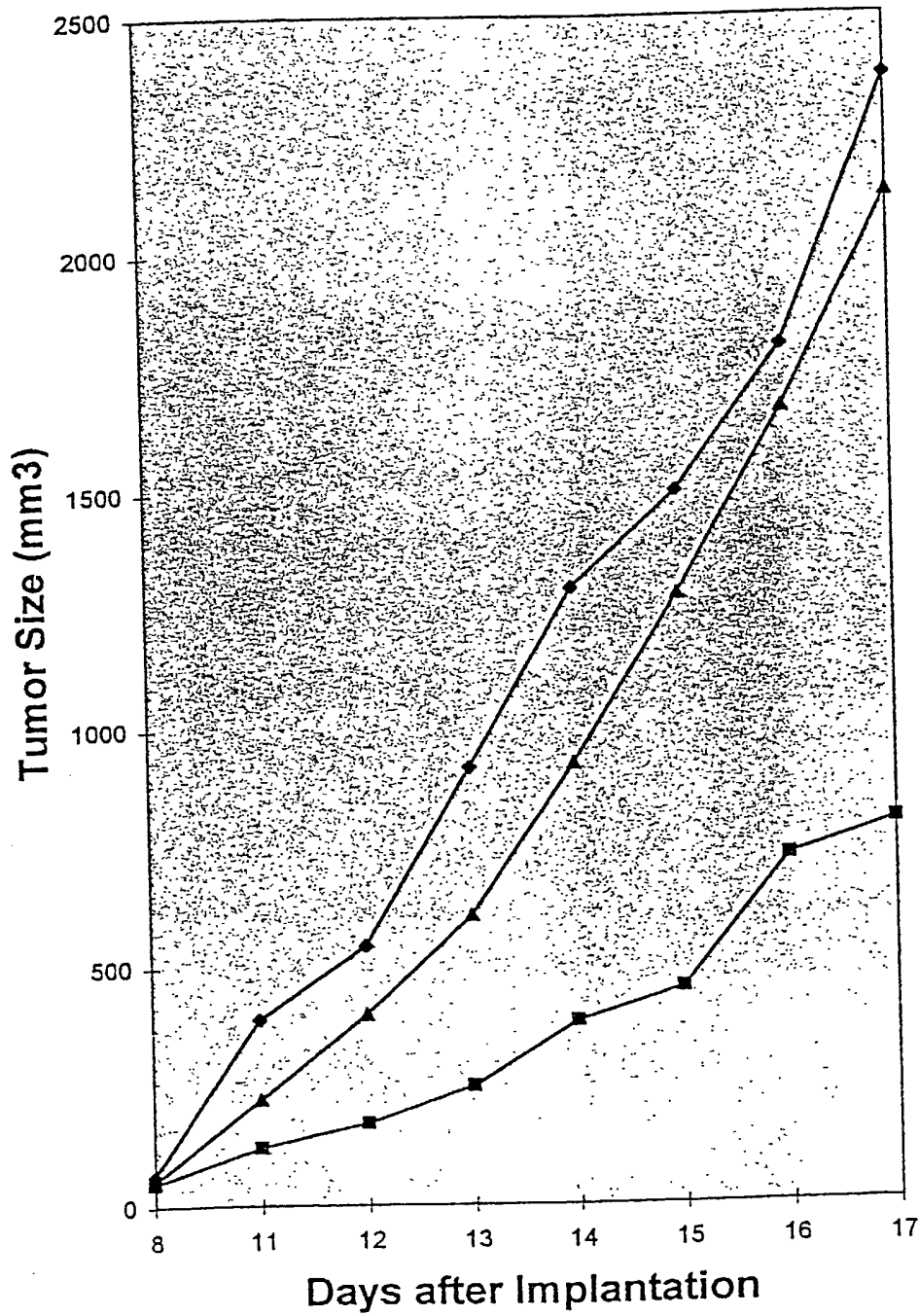


Fig. 43(B)





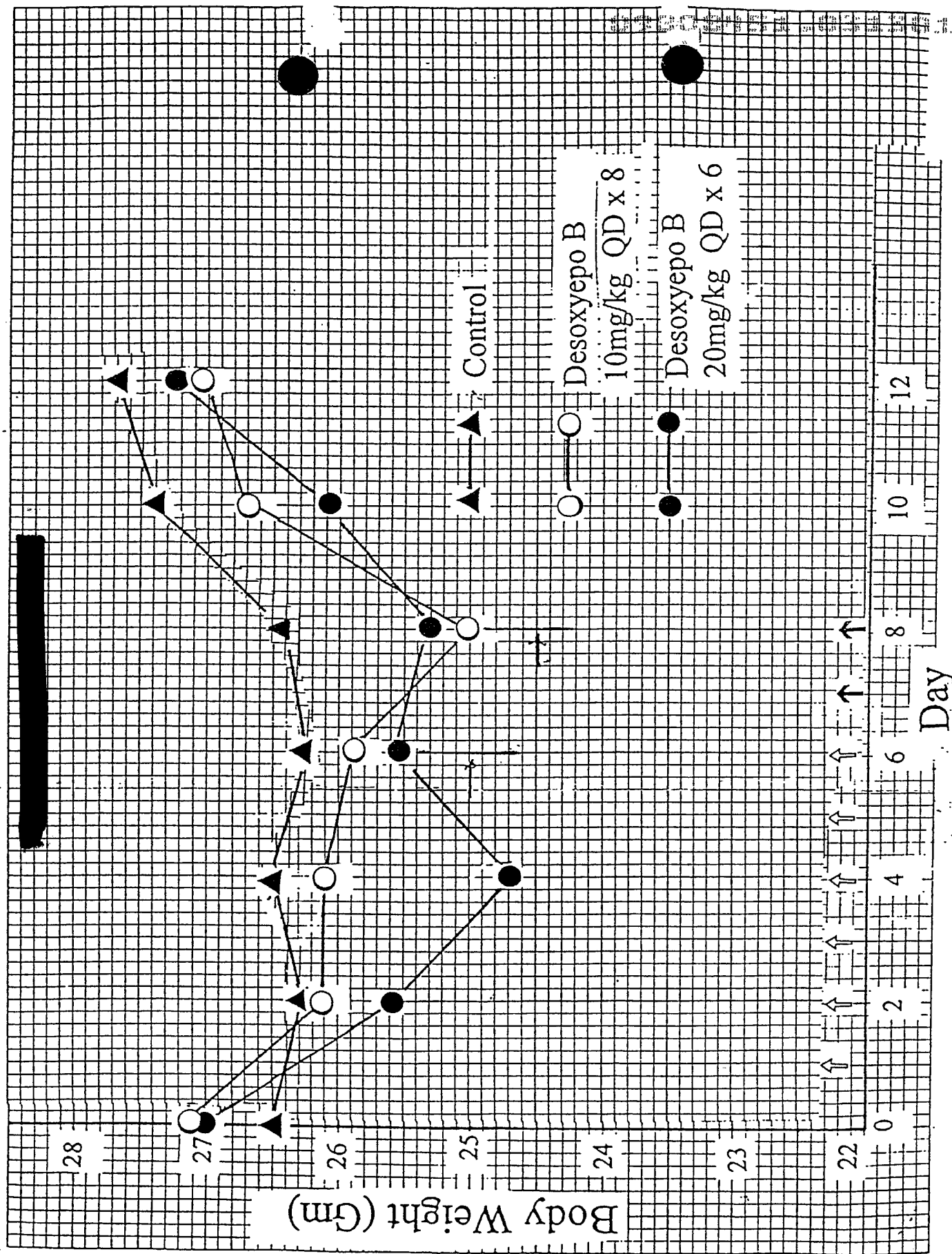


Fig. 44(A)

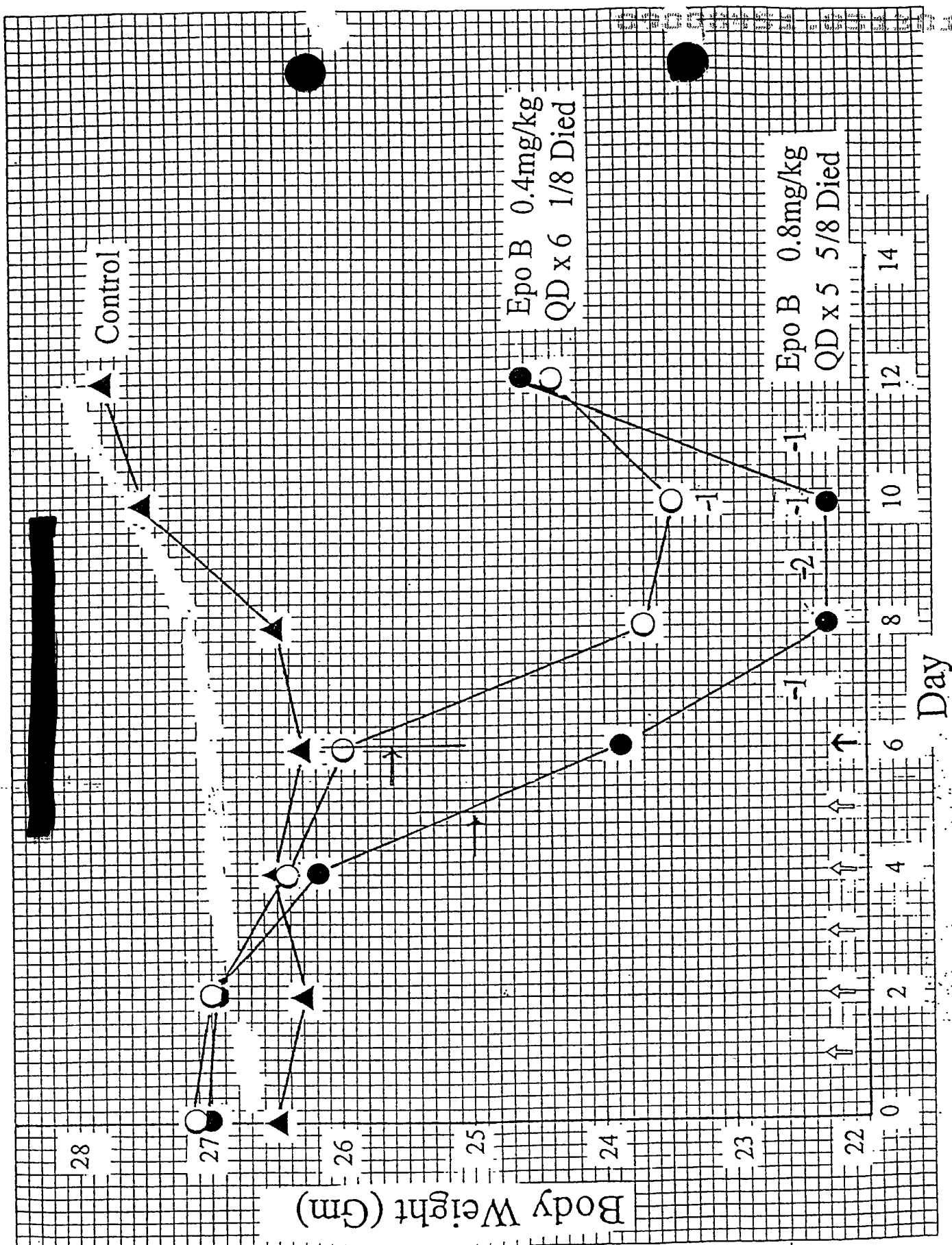
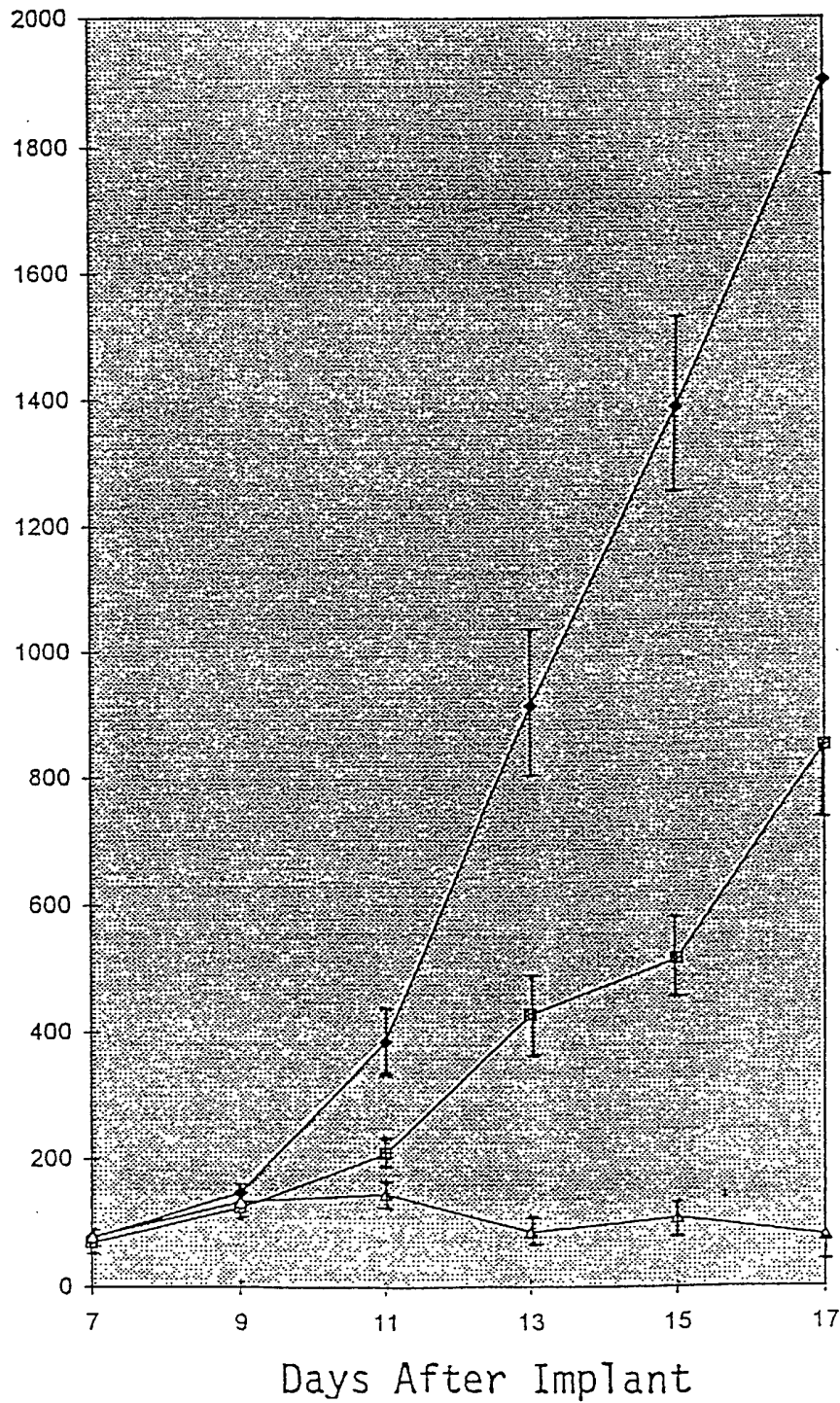
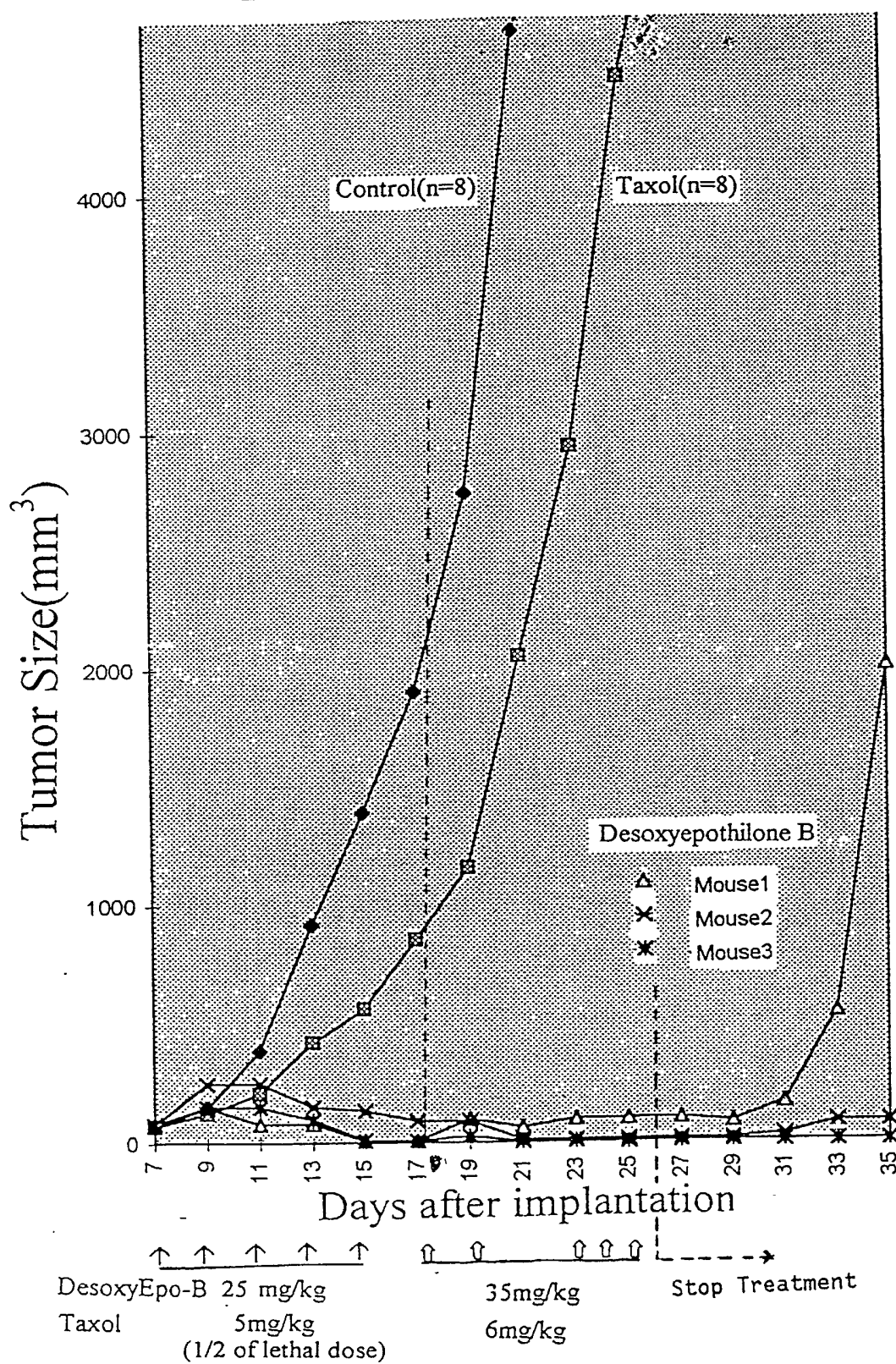


Fig. 44(B)

Fig. 45(A)





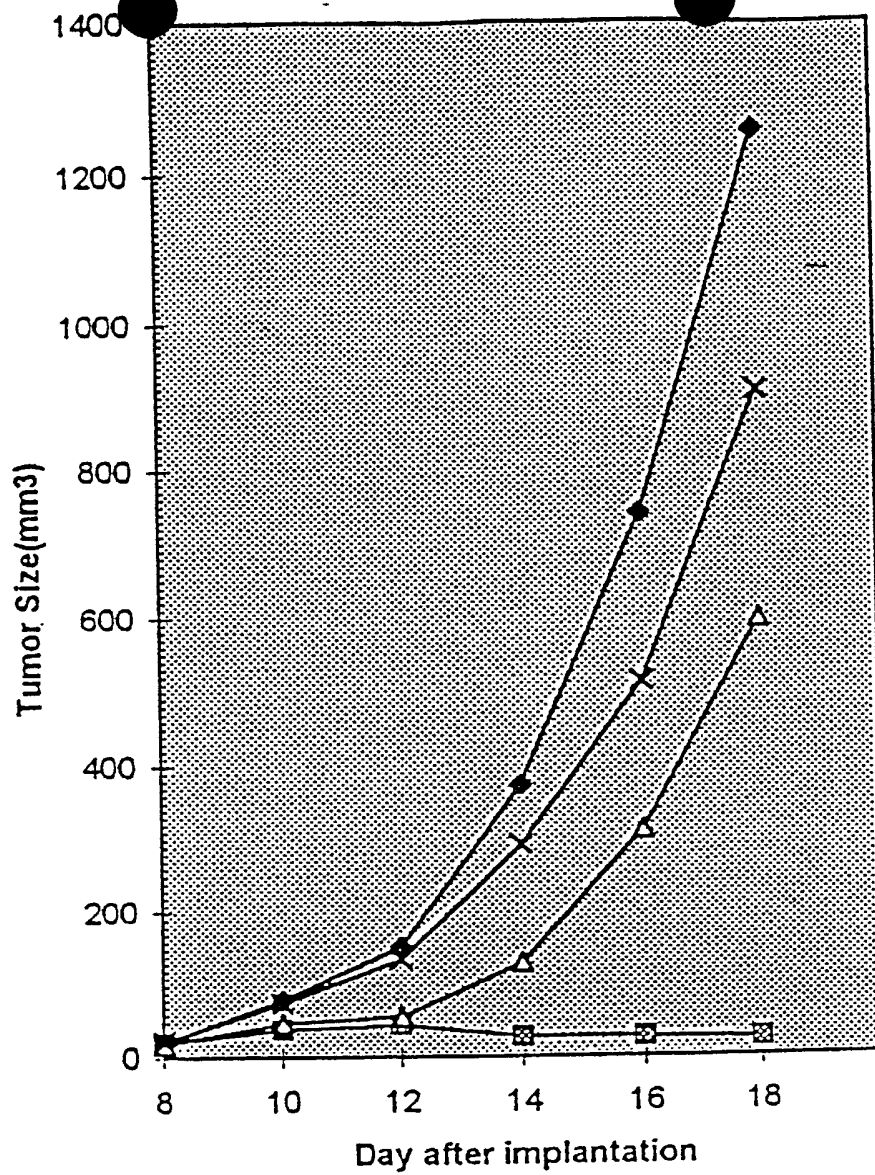
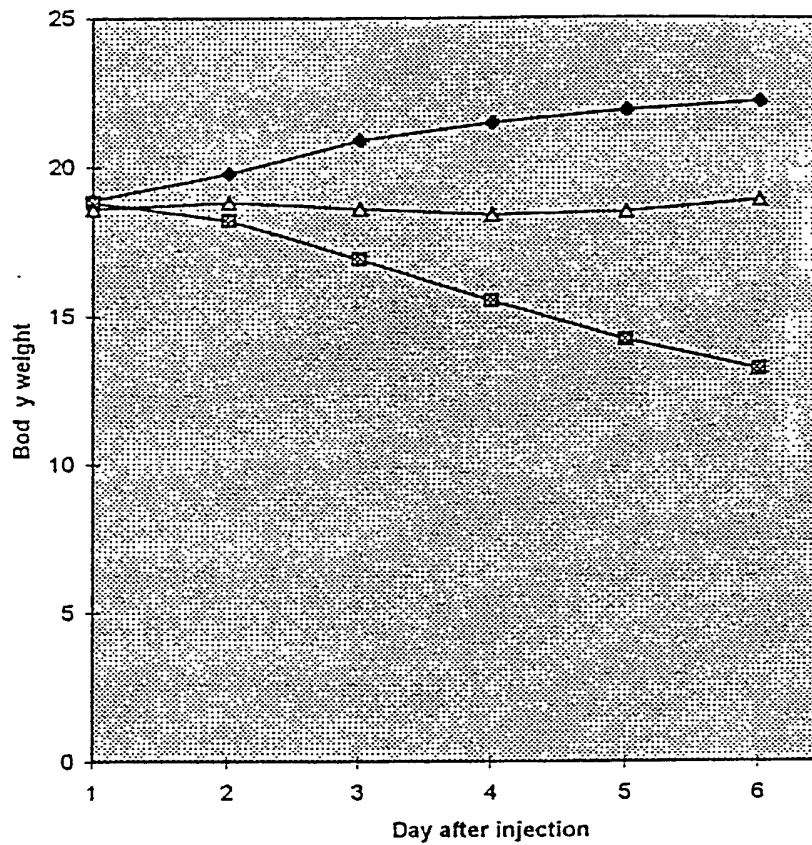


Fig. 46

Fig. 47



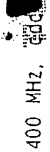
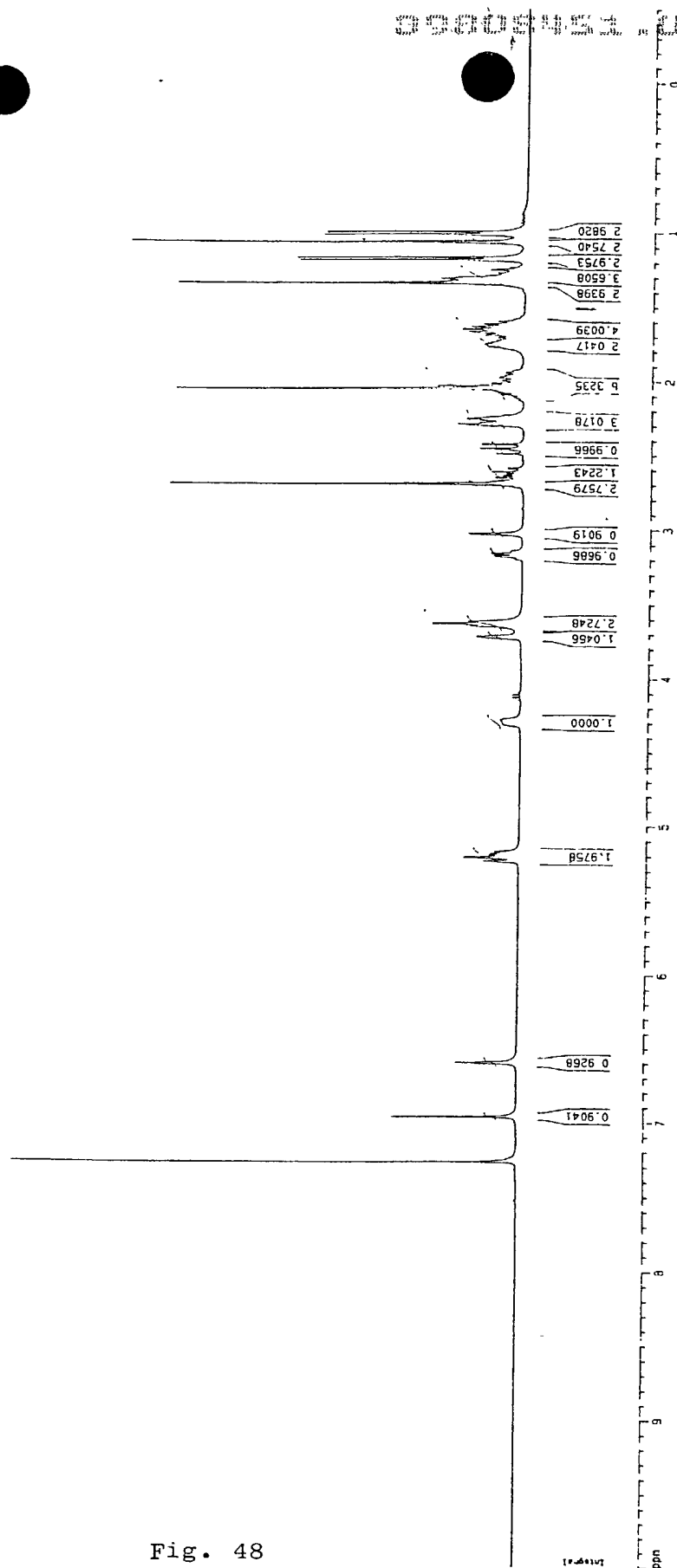
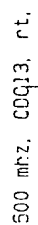


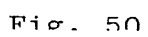
Fig. 48



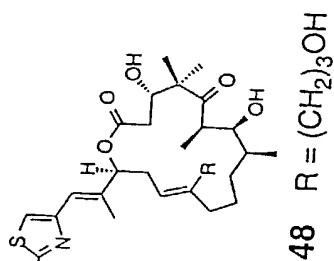


7









1624.11  
1631.26  
1638.42  
1710.37  
1720.22  
2010.14  
2029.68  
2036.33  
2042.92  
2055.97  
2099.94  
2126.03  
2131.13  
2136.03  
2164.02  
2176.09  
2187.59

2612.46  
2636.65  
2640.94  
2700.96  
2702.04  
2761.42

2767.42  
2768.59

972.02  
938.34  
844.55  
830.96  
815.94  
804.66  
797.46  
783.97  
763.34  
660.64  
656.21  
647.50  
636.52  
629.87  
625.26  
528.48  
502.42  
489.76  
482.05  
475.49  
453.23  
447.16  
441.36  
405.50  
396.05  
368.61  
375.59  
358.61  
331.37  
26.05  
6.10  
6.12

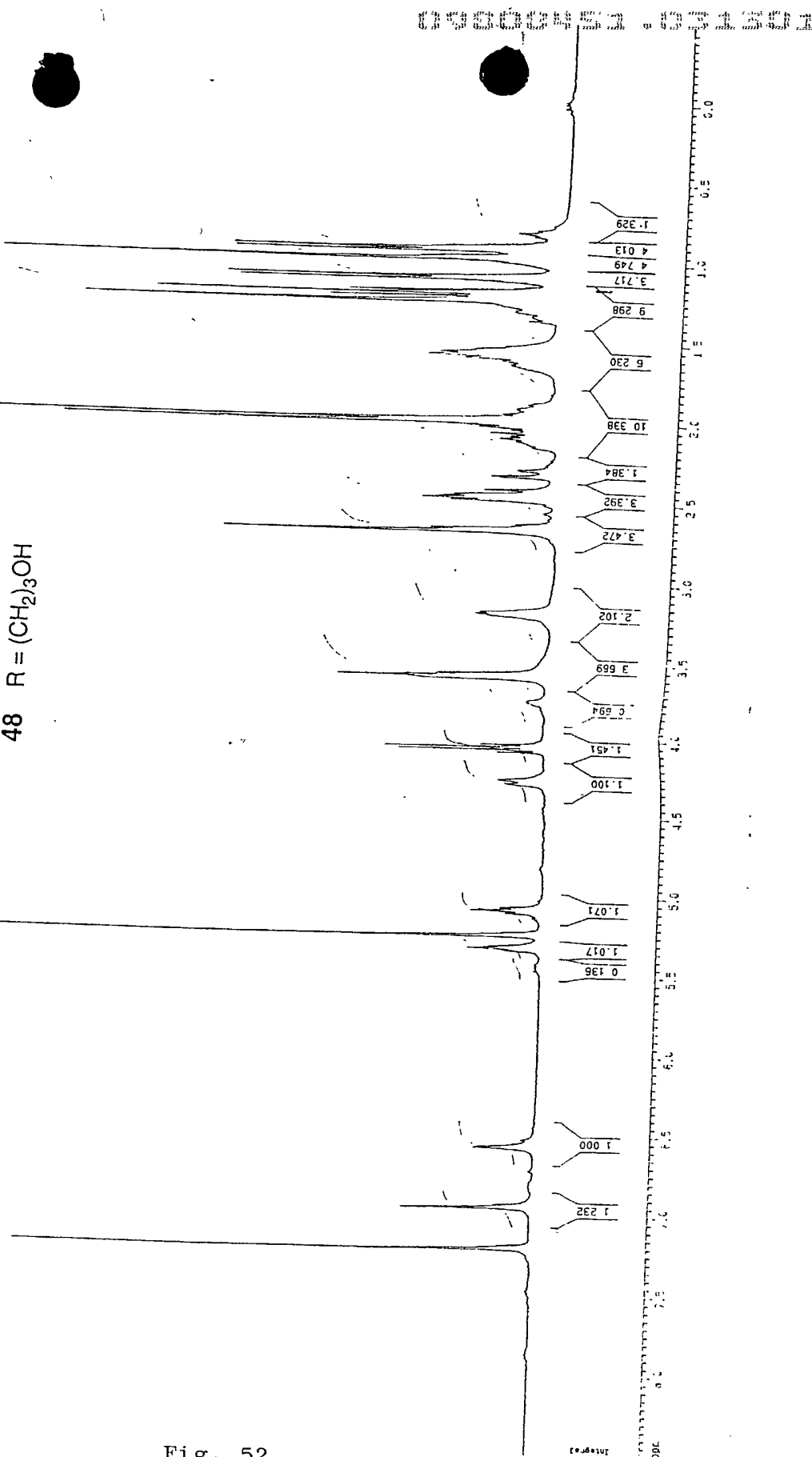


Fig. 52